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Evaluation of Outpatient Service Quality using SERVQUAL Model – a case study of a Chinese Public Hospital

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Master in Business Administration

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BUSINESS
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Department of Marketing, Strategy and Operations

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RESUMO

Compreender a satisfação do paciente não é apenas uma necessidade de marketing médico, mas também um conteúdo importante da gestão da qualidade. Este estudo replica o modelo SERQUAL (SQ) utilizado por outro pesquisador para avaliar a satisfação dos doentes ambulatórios. Este estudo tem como foco a avaliação dos pacientes sobre a qualidade dos serviços ambulatoriais e melhorias direcionadas para melhorar a sua satisfação. Neste estudo analisamos os resultados da regressão e da análise SQ para identificarmos que o tangível é relativamente importante para a melhoria da satisfação e sua lacuna é relativamente óbvia. As dimensões, "Sistema de agendamento fácil", "Horário do exame" e "Quarto confortável" apresentaram as maiores discrepâncias. Em resumo, para a melhoria da satisfação ambulatorial a gestão do hospital deve focar-se nestas dimensões.

PALAVRAS-CHAVE: Qualidade do serviço médico; Satisfação ambulatorial; Modelo SERVQUAL

CLASIFICAÇÃO DE JEL: I11/M100

ABSTRACT

Understanding patient satisfaction is not only a need of medical marketing, but also an important content of quality management. In this study, SERVQUAL (SQ) model previously studied by another researcher was used as a tool to evaluate outpatient satisfaction. This study focuses on patients' evaluation of outpatient service quality and targeted improvement to improve outpatient satisfaction. Through the analysis of the results of regression analysis and SQ analysis, it is found that the tangible impact on the improvement of satisfaction is relatively important, with obvious differences. In addition, the gaps in "convenient appointment system", "examination time" and "comfortable room" is the largest. Therefore, we can conclude that to improve outpatient satisfaction, hospital management should pay more attention to these dimensions and projects.

KEYWORDS: Medical service quality; Outpatient satisfaction; SERVQUAL model

JEL CLASIFICATION: I11/M100

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CHAPTER 1: INTRODUCTION

From the data of the World Health Organization, in 2019, health expenditure per capita in China is 535.1 US$ while is 2,221 US$ in Portugal, moreover, health expenditure per capita in the United States of America is 10,921 US$（Data from Google). China's per capita spending on health services is less than a quarter of Portugal's and one-twentieth that of the United States. China's medical investment is relatively insufficient, and the scarcity of resources has led to tension between doctors and patients. In addition, in the face of the epidemic, health resources are tilted, resulting in less and less financial support for general hospitals. Hospitals are responding to the call of the state, responding to the epidemic. The economic environment is declining, hospitals should better seek survival and stand out by relying on the general environment to ensure the quality of medical care, otherwise, it will be eliminated. From the Statistical Information Center of the Chinese Government, in July 2021, the number of public hospitals in China decreased by 46 compared to the same period in 2020. To solve these problems, the Chinese government has vigorously pursued medical reform in recent years.

The "Opinions of the Chinese Communist Party Central Committee and the State Council on Deepening the Reform of the Medical and Health System (2016) " clearly put forward the goal of "providing safe, effective, convenient and inexpensive medical services for the people". These goals put pressure on general hospitals especially public hospitals under the continuous deepening of the reform of China's medical system.

Outpatient clinics are the window of hospital management and improving the quality of outpatient services is an important means to attract patients. In other words, it is the top priority of improving modern hospital management. The Chinese government department (2019) proposes the following plans for outpatient services in hospitals：

- Optimize outpatient and emergency services, implement various forms of appointment diagnosis and treatment services, gradually increase the proportion of patient appointments, timely disclose outpatient information, and carry out multidisciplinary diagnosis and treatment to facilitate patients to seek medical treatment.

- Optimize the medical environment, the medical environment is clean, comfortable, and safe, and provides patients with clear, standardized, eye-catching and easy-to-understand signs for patients to receive treatment, guidance, consulting services, emergency and outpatient waiting areas, and medical technology departments.

In China, public hospitals are placed in a pivotal position within medical service institutions, and the state's evaluation and reform of public hospitals are constantly increasing. With the gradual deepening of the hospital's review work, the patient-centered service concept has gradually emerged. Patient satisfaction has also been included in the performance appraisal indicators of tertiary public hospitals by the Chinese government.

In addition, with more private hospitals being built, and international medical care has entered the Chinese market, managers began to think about how to survive under such fierce competition. To survive in the market means that the hospital should attract more patients. The improvement of satisfaction has become the key to the management and operation of many large general hospitals and the creation of economic benefits, and high-quality medical services are important means to improve patient satisfaction. In this case, how to continuously improve the quality of medical services at lower cost, and how to set up a good social image to attract more customers became the goal of public hospitals.

In recent years, people's income level has also laid an important economic foundation and the pursuit of medical services with better quality is human nature. According to the data released by the National Bureau of Statistics recently, the per capita disposable income of residents nationwide in 2021 will be 35128 yuan, a nominal increase of 9.1% over the previous year, and an average nominal increase of 6.9% in two years; Excluding the price factor, the actual growth was 8.1%, with an average growth of 5.1% in two years, basically in line with the economic growth. Only excellent service can cater to people's needs. There is a drive to respond to patient experience by incorporating their views into medical service changes. Differentiated services bring a competitive advantage and a more harmonious doctor-patient relationship.

This dissertation believes that for medical institutions, continuously improving patient satisfaction is the inevitable result of the development of medical services, so it is necessary to improve the quality of medical services, starting from the aspects of standardization,

process, and refinement, taking into account the configuration of hardware equipment and the improvement of soft capabilities. At the same time stimulating the enthusiasm of outpatients to participate in the improvement of service quality through an effective questionnaire can be aware of their needs. And hospital can take measures to ensure the comprehensive construction and implementation of service quality management mechanisms from all levels based on the results. This is also the trend and direction of the development of medical services.

1.1 Problem

Nowadays, hospitals are under the dual pressure of quality management requirements from the government and economic competition with other hospitals. In the fiercely competitive environment, driven by globalization, healthcare providers, managers, and managers recognize the importance of quality of service to the survival and success of businesses. Medical service refers to the entity and quality of medical services provided by doctors, which can meet the needs of patients for the use value of medical services, including diagnosis and treatment technology, service attitude, service commitment, hospital image, and social reputation, which can bring additional benefits and psychological satisfaction and trust to patients and can meet spiritual and psychological needs. Today's medical services have entered the era of experiential services, which requires patient participation and cooperation, and only in this way can the doctor-patient relationship be better constructed.

For continuous improvement of medical quality, many doctors and managers introduced quality management concepts and tools from other countries like Japan. Due to the complexity of delivering medical services, the industry has been seeking to achieve a level of excellence that creates value for patients in a sustainable way. For this reason, patient satisfaction must be the main focus of the hospital. To improve patient satisfaction, we need to first understand their needs and expectations. But in China, seldom hospital can use a proper model like SERVQUAL Model.

Through questionnaire surveys, we found the gap between the quality of Outpatient clinics' medical and health services obtained by patients and the expected values and proposed targeted dimensions and items that are conducive for hospital managers and promoting hospitals to improve the quality of outpatient medical services, to improve patient satisfaction

in public hospitals, improve doctor-patient relationships, and enhance hospital competitiveness.

1.2 Objective

1.2.1 General objective

The overall goal of this work is to improve patient satisfaction of three tertiary public hospitals through the SERVQUAL model, assessing customer satisfaction and their expectations and practical feelings about all aspects of the quality of care, identifying gaps, and looking for key breakthrough areas.

1.2.2 Specific Objectives

Truly understand the needs of patients, clearly know the problems that the hospital's outpatient departments need to improve, and know the dimensions and items that medical staffs need to improve. so as to reach a better satisfaction rate and improve the doctor-patient relationship.

Patient satisfaction directly reflects the service level of the hospital. By improving patient satisfaction the hospitals can establish a good image and improve the core competitiveness of the hospital, which can not only let the public hospital better cope with the assessment of the state, but more importantly, get more social and economic benefits.

CHAPTER 2: LITERATURE REVIEW

2.1. Quality

According to Aristotle, "quality" is one of the basic categories of thought and reality of the human population. Currently, according to the International Organization for Standardization (ISO), "quality" is "the totality of properties of a product or service that determine it to meet identified or anticipated needs."

The quality of medical services can be evaluated in the following two areas: clinical (postulated) quality and perceived quality. The clinical quality of services reflects an objective medical outcome. In turn, the perceived quality is related to the patient's subjective awareness about the way he/she was contacted, cared for, or shown interest at a medical facility. Pascoe (1983) proposed that Patient satisfaction is a patient's response to a medical experience that includes results and content. Experience is related to the patient's subjective feelings, including the feeling of medical services experienced in the past, through which the patient develops a perception of the level of medical services that must be achieved.

According to Opolski K. et al. (2011), an important component of the aforementioned quality, i.e., perceived quality, is the patient's perception of staff competence level, as well as of the convenience and aesthetics of the medical institution. Opolski K. et al. (2011) also believed: "quality is an objective goal that should be pursued." "Quality" is a comparison between expectation and performance or the obtained effect. Therefore, the quality perceived by patients is the actual quality that patients really experience. This is one of the theoretical bases for our patients to understand patient satisfaction through questionnaires.

2.2 Service Quality

Service quality is both an abstract and exclusive concept due to its intangibility and inseparability characteristics. Specifically, service quality is comprised of what service consumers receive in their interaction with the providers, reflected in technical, physical and outcome quality, as well as technical quality delivery methods, in terms of functional, interactive, and process quality.

Opolski et al. (2011) claimed that the quality of medical services provided should be determined by the highest professional competence and dedication that meet the patient's expectations.

Hence, quality is obtained when a physician contributes accordingly to his patient’s achievable level of health.

2.3. Quality of Health Services and Satisfaction

The quality concept in health care research has been investigated from a different angle. Quality in health care services is "the ability to achieve desirable objectives by using legitimate means".

In Risser's (1975) opinion, patient satisfaction with healthcare can be conceptualized as the discrepancy between his or her expectations of ideal healthcare service and perception of the service he receives. He believed that patient satisfaction increases when the outcome or state of the patient's treatment can achieve the desired outcome or state of the patient. Johansson et.al.(2010) thought patient satisfaction is defined as the patient's subjective evaluation between the health care that they accept actually and the ideal one they expected of their real reaction at the moment after they interact with the environment and the people in the hospital.

Most patient satisfaction studies had implicitly used a discrepancy approach, which includes the subject perception of what is expected or valued as the baseline for comparing the actual outcomes. Thus, discrepancy theories define satisfaction as the difference between actual outcomes and some other ideal outcomes. The degree of satisfaction is a dependent measure of the structure, process, and outcome of service. A degree of satisfaction also is seen as contributing to subsequent patient commitment to and compliance with recommended treatment as well as affecting the likelihood of returning to the same provider and health care delivery program.

Nowadays, managing marketing in health care services is critically important as the competitive pressure and cost values constantly grow. Because of these changes in the market environment, physicians must consider solutions to increase the number of health consumers. Therefore, understanding expectations and current satisfaction conditions can help to

understand the weaknesses of services and find the direction and focus to improve the quality of medical care.

By improving the quality of service, that is, reducing the gap between patient expectations and actual feelings, thereby improving satisfaction, patients' compliance with medical services will increase, and the sense of trust in medical staff will increase, to some extent, it can increase patients' willingness to seek medical treatment and improve the efficiency of hospitals.

In order to be successful or survive in a competitive marketplace, it is essential to deliver to consumers, services that meet or exceed their expectations, suggesting the offer of a high level of service quality. This rule of thumb applies to health care services as well.

No matter how patients feel or evaluate, scholars all emphasize the subjective cognition of patients in the process of using medical services. Therefore, when selecting research tools and methods, this dissertation focuses on comparing patients' expectations and feelings, measures patients' satisfaction through such differences, determines more important influencing factors and proposes improvement countermeasures.

2.4. Quality Assessment Model

Research on patient satisfaction measurement methods is still early. In 1985, Parasuraman et al. research formed the SERVQUAL model, which is widely used in customer satisfaction evaluation in various fields.

According to the SERVQUAL model which considers the gaps in service quality (Parasuraman, Zeithaml and Berry 1985,1988; Zeithaml, Berry and Parasuraman 1988), consumers evaluation of the service quality that they get compared with the one that they want to get ideally.

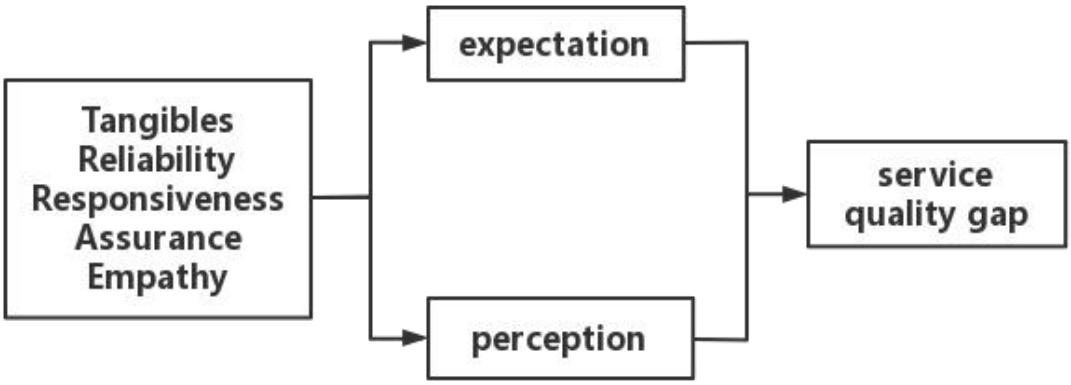
PZB began to study factors related to customers' perceptions and decisions regarding service quality. In 1985, PZB had put forward the "service quality gap model" in a published article titled "A conceptual model of service quality and its implication for future research" in the Journal of Marketing. They proposed five gap models, the first involving the gap between

consumer expectations and managers' views of expectations, and the second gap between managers' views of user expectations and the company's quality standards. The gap third stems from the gap between the quality standard and the service delivered to the user, the gap fourth is the gap between the promised service and the service provided, and the fifth gap refers to the gap between the service provided and the service received.

The fifth gap (the gap between customer expectations and views) was later focused on research, and a service scale called SERVQUAL was developed. While this "service quality gap model" originally had 10 dimensions, they cut it down to five—tangibles, reliability, responsiveness, assurance, and empathy—which were described by three of them as follows: "1. Tangibles: physical facilities, Equipment, and appearance of personnel; 2. Reliability: ability to perform the promised service dependably and accurately; 3. Responsiveness: willingness to help customers and provide prompt service; 4. Assurance (including competence, courtesy, credibility, and security): knowledge and courtesy of employees and their ability to inspire trust and confidence; 5. Empathy (including access, communication, and understanding the customer): caring and individualized attention that the firm provides to its customers."

A schematic diagram of the SERVQUAL model is shown in the following figure:

Figure 2.1 SERVQUAL Model Figure



Source: Parasuraman A

The answers to questions are presented in a five-level format of the Likert scale (Likert, 1932), where 1 is definitely dissatisfied and 5 are definitely satisfied, the numbers between 1 and 5 are progressive.

Just like the picture above shows, the service quality gap is determined by calculating the discrepancies between the ratings of customer's perceptions and expectations, according to the formula below:

$$SQ = P - E$$

where SQ is overall service quality, P is the perception of service quality provided, and E is expected service quality.

A positive assessment of the gap indicates that the client's expectations have been met, i.e., the perception of services is nearly 5, and the expectation is relatively lower. On the other hand, the score for the gap is negative, which means that the services provided have not met the expectations, so their perception is unsatisfactory, which has room for improvement.

The SQ gap model enables the identification of five gaps/discrepancies and the factors that relate to them, making it possible to determine the service quality provided. SQ is therefore intended to assess the level of customer satisfaction with service quality in various sectors or industries. Identification of such gaps may help eliminate the dissonance between the level of a customer's expectations and patient perceptions of service provided, which, in turn, may contribute to increased customer satisfaction and thus improve the quality of service.

Some scholars had applied it to the medical field to conduct patient satisfaction surveys. Babakus and Mangold (2002) found that SERVQUAL is reliable and valid when employed in a hospital environment.

Scholars have published several related dissertations in the medical industry using the SERVQUAL model. Fan, L. H. et.al. (2017) used the SERVQUAL model, the gap between patients' expectations of service quality was investigated, and it was concluded that if the patient perceived the quality of service was lower than expected, the hospital needed to adjust according to the actual situation. Mohammadi-Sardo et al. (2018) assessed patient satisfaction

in the emergency department with a modified SERVQUAL model. Of the components assessing patient satisfaction, tangibles were the most effective component and empathy was the least effective one.

Al-Borie et.al. (2013) used the SERVQUAL model, a questionnaire survey of 1,000 residents in five private hospitals in Saudi Arabia confirmed the statistical impact of gender literacy, income, and occupation on inpatient satisfaction, and provided guidance for the restructuring of health services in Saudi Arabi.

Garrard et.al. (2013) used an adapted SERVQUAL questionnaire to assess a reconfigured antenatal clinic service, identified and improved the two most different aspects of the hospital, had effectively improved the quality of service in the department. Al Fraihi, K. J., & Latif, S. A. (2016) used an adapted SERVQUAL model to study outpatient service quality in Eastern Saudi Arabia and the results showed that it is a good model to evaluate outpatient service quality. Through analysis, they found that all five dimensions should be improved in Eastern Saudi Arabia. This dissertation used this adapted model, and it is also valid from the data.

The SERVQUAL model is becoming more and more widely used, and its applicability has been fully verified empirically, providing dimensions and ways to improve patient satisfaction by improving medical services, which is one of the considerations for in-depth research on this model. Its practical application to patient satisfaction assessment is to help hospital managers grasp patient satisfaction and at the same time help managers find the best way to solve satisfaction-related problems and effectively improve the quality of medical services. This model is currently used in hospitals to evaluate patient satisfaction.

Considering the above, to monitor the quality of medical services provided, it is reasonable to use the SERVQUAL model to assess healthcare service quality in the medical sector including the outpatient clinical departments.

SERVQUAL scale has proved to be robust as an instrument to measure service quality and to encompass all dimensions of service quality in all service settings, previous studies have reported that SERVQUAL can be modified for each service sector. Just like Al Fraihi, K. J., & Latif, S. A. (2016). Therefore, in this dissertation, we applied the SERVQUAL model and cited a questionnaire applicable to outpatient clinics.

The findings of Al-Bori and Damanhouri (2013) suggested that patients' gender, education, income, and occupation have an impact on patient satisfaction. The findings of Al Fraihi, K. J., & Latif, S. A. (2016) suggested that there is a significant association between gender, age, education, multiple visits, and service quality dimensions.

It can be seen from the comprehensive research that the factors affecting the satisfaction evaluation of medical institutions by patients are not only closely related to the service itself but also the personal factors of patients. Therefore, in the process of investigation and analysis, this dissertation also analyzed the individual factors of patients and paid attention to the discrepancy in personalized services of different types of patients.

This section elaborates on quality, service quality, quality of medical services, SERVQUAL model and various factors affecting services (patients' factors and hospital factors), which lays a certain theoretical research foundation for subsequent research projects.

CHAPTER 3: METHODOLOGY

3.1 Choice of SERVQUAL Questionnaire

Drawing on the previous study of Al Fraihi, K. J., & Latif, S. A. (2016), it is valid to adopt the improved SERVQUAL model questionnaire.

Table 3.1 Improved SERVQUAL Questionnaire

Dimensions	Questions
TangibleA1	Well maintained equipment
TangibleA2	Clean waiting facilities
TangibleA3	Neat professional appearance
TangibleA4	Comfortable room
TangibleA5	Clean toilet
TangibleA6	Prompt services
ReliabilityB1	The doctor/staff should be pleasant
ReliabilityB2	Error-free record
ReliabilityB3	Punctual at clinic
ReliabilityB4	Adequate medical examination time
ResponsivenessC1	Easy appointment system
ResponsivenessC2	Prompt responsive examination time
ResponsivenessC3	Easy appointment system
ResponsivenessC4	Prompt service of the outpatient department reception desk
ResponsivenessC5	Easy and adequate medical information to patients
AssuranceD1	Good professional knowledge
AssuranceD2	Courteous outpatient department staff
AssuranceD3	Feel confident and safe
AssuranceD4	Error-free services
EmpathyE1	Treated with dignity and respect
EmpathyE2	Understand the specific need of the patient
EmpathyE3	The privacy should be observed

Source: Al Fraihi, K. J., & Latif, S. A. (2016)

In addition, we asked the patient about their overall satisfaction to learn about the relationship between perception and overall satisfaction. Each question is scored from 1 to 5, representing 1 point for strongly disagree, 2 points for relatively disagree, 3 points for not sure, 4 points for relative agree and 5 points for strongly agree in a five-level format of the Likert scale. Finally, they asked about their overall satisfaction of this visit to the hospital also in a five-level format of the Likert scale. This dissertation investigated and analyzed the satisfaction of outpatients who visited a tertiary Chinese medicine hospital in China from March 3 to March 16 in 2022. All participants are not younger than 18 years old. They scanned the QR code to fill in the basic information and expectations based on the service

attributes in the questionnaire when waiting for treatment and then filled in the actual feelings after the visit is completed. As we chose a period to represent the overall service quality and all the participants were a sample. So, this is an inferential statistic for this dissertation.

3.2 Data collection, cleaning and analysis

The patient population was randomly selected to fill out the questionnaire through online collection methods and after eliminating invalid questionnaires such as returned and incomplete questionnaires, the data were coded and processed to prepare data for the follow-up study. We used SPSS 22.0 to analyze the data that we had got from patients. The approach was quantitative including descriptive analysis, ANOVA, correlation analysis, regression analysis and SERVQUAL analysis.

3.3 Reliability analysis

Table 3.2 Reliability on the Expectation scale

Dimensions	Cronbach's Alpha	N of Items
E_Tangible	0.940	6
E_Reliability	0.946	4
E_Responsiveness	0.943	5
E_Assurance	0.947	4
E_Empathy	0.951	3
E_Total	0.984	22

Source: the author

The reliability of the system is assessed based on correlation coefficients between the items or measures that comprise the system. Cronbach coefficient was proposed by Cronbach in 1951, which can be used to calculate the reliability of questionnaires and is the most commonly used reliability measure in social science research. When a research structure has many problem combinations, and each problem item is related to the structure, it is a coefficient. This coefficient is used to measure the consistency between items in the same theoretical dimension. In basic research, the reliability should be at least 0.7, which indicates that the internal consistency of this scale is within the acceptable range and has certain reliability.

The results of the reliability analysis of the scale were obtained by data output through SPSS 22.0, and the reliability was above 0.90, indicating that this scale has high reliability and meets the requirements of the study.

Table 3.3 Reliability on the Perception scale

Dimensions	Cronbach's Alpha	N of Items
P_Tangible	0.950	6
P_Reliability	0.932	4
P_Responsiveness	0.916	5
P_Assurance	0.941	4
P_Empathy	0.919	3
P_Total	0.982	22

Source: the author

Similarly, the results of the reliability analysis of the scale were obtained by data output through SPSS 22.0, and the reliability was above 0.90, indicating that this scale has high reliability and meets the requirements of the study.

3.4 Validity analysis

Validity refers to the extent to which the measured results reflect the content to be examined. The better the results match the content to be examined, the higher the validity; conversely, the lower the validity. Content validity and structural validity are generally tested by content validity, where content validity indicates whether the measurement instrument can cover the measurement content well.

Table 3.4 Validity on the Expectation scale

KMO		0.962
Bartlett's Test of Sphericity	Approx. Chi-Square	9039.125
	df	231
	Sig.	0.000

Source: the author

The KMO value of this test is 0.962, which is a high value, indicating that the variables are extremely well correlated, the approximate chi-square of Bartlett's T sphericity test is 9039.125, the p-value is 0.001<0.01, the original hypothesis of Bartlett's sphericity test is rejected, indicating that there is a correlation between the original variables. so, the validity of this questionnaire is good enough to be used and analyzed.

Table 3.5 Validity on the Perception scale

KMO		0.969
Bartlett's Test of Sphericity	Approx. Chi-Square	8285.239
	df	231
	Sig.	0.000

Source: the author

Similarly, the KMO value of this test is 0.969, which is a high value, indicating that the variables are extremely well correlated, the approximate chi-square of Bartlett's T sphericity test is 8285.239, and the p-value is 0.001<0.01. this can prove that the perception part of the questionnaire is also can be used.

3.5. Introduction of the Hospital

The Hospital was founded in 1957 in Guangdong Province. It is a comprehensive Chinese medicine hospital integrating medical, teaching, scientific research, and preventive health. It is one of the first batches of tertiary TCM hospitals demonstrated in 1993. The hospital covers an area of 210 mu, with a total construction area of 260000 square meters. It has 30 clinical departments, 32 sick bays, and more than 2000 beds.

CHAPTER 4: RESULTS, FINDINGS AND DISCUSSION

This study focuses on the patients' evaluation of the quality of outpatient services and targeted improvement dimensions and items. To further understand patient satisfaction with the outpatient clinic, a more detailed research design, scientific data collection, data cleaning and scientific statistical methods were then used, which may include descriptive analysis, ANOVA, correlation analysis, regression analysis and SQ analysis.

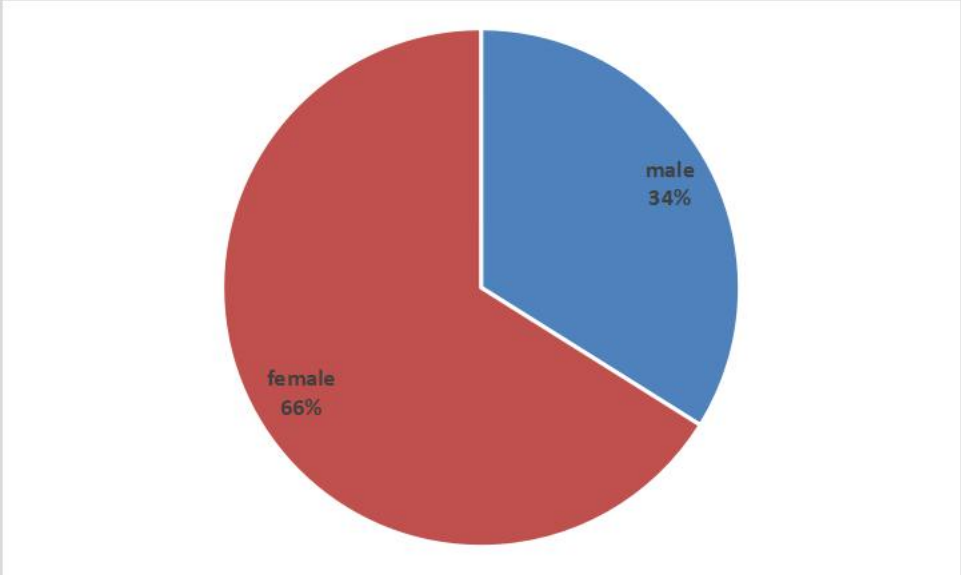
4.1 Descriptive Statistics

Table 4.1 Gender composition statistics table

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	100	33.9	33.9	33.9
Female	195	66.1	66.1	100
Total	295	100	100	

Source: the author

Figure 4.1 Gender distribution



Source: the author

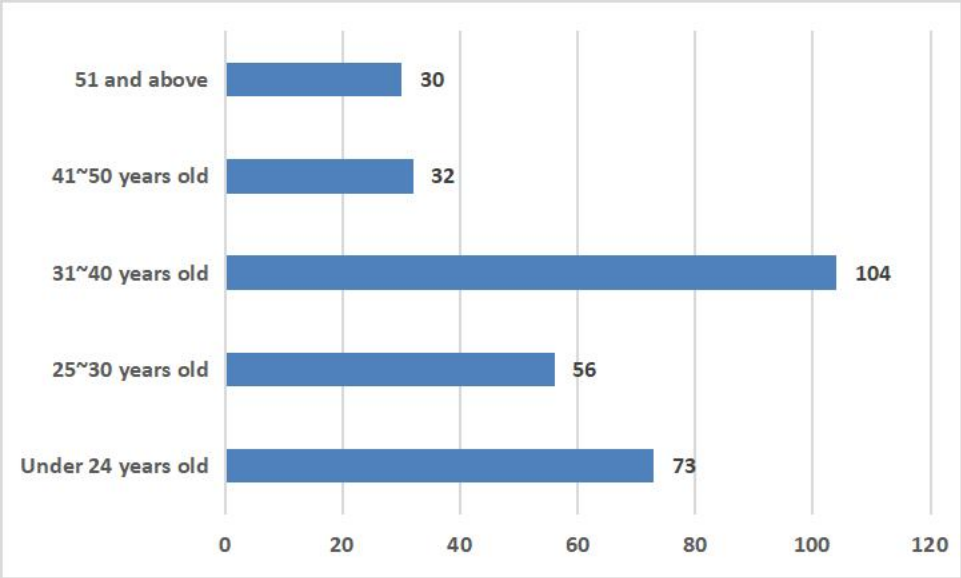
A general descriptive analysis of the basic information of the respondents shows that there are 100 males (33.9% of the total) and 195 females (66.1% of the total), indicating that the ratio of males to females is higher.

Table 4.2 Age composition statistics table

Age	Frequency	Percent	Valid Percent	Cumulative Percent
Under 24 years old	73	24.7	24.7	24.7
25~30 years old	56	19	19	43.7
31~40 years old	104	35.3	35.3	79
41~50 years old	32	10.8	10.8	89.8
51 and above	30	10.2	10.2	100
Total	295	100	100	

Source: the author

Figure 4.2 Age distribution



Source: the author

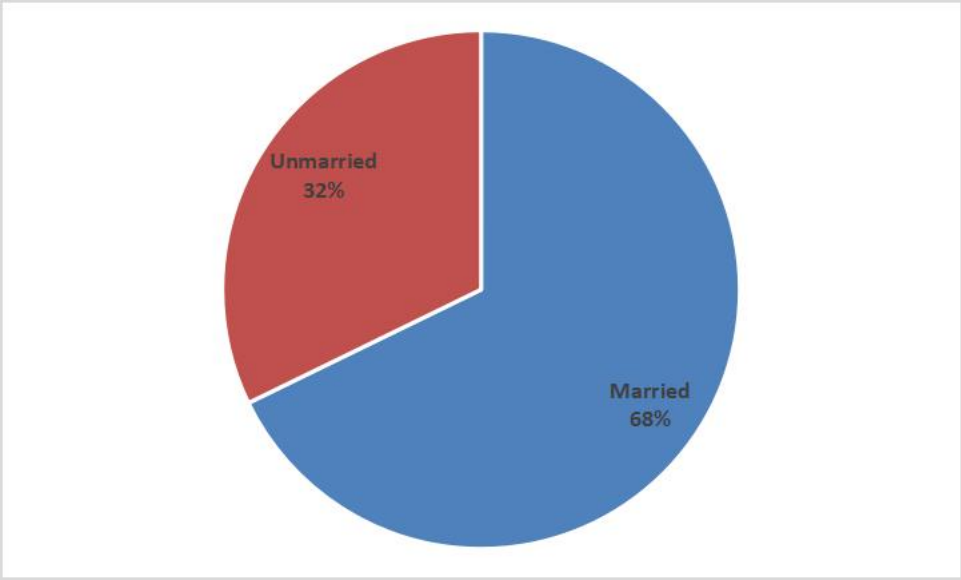
Analyzing, the age composition of the respondents there were 73 people under 24 years old, accounting for 24.7%. There were 56 people between 25 and 30 years old, accounting for 19.0%. There were 104 people between 31 and 40 years old, accounting for 35.3%. There were 32 people between 41 and 50 years old, accounting for 10.8%. There were 30 people between 51 and above, accounting for 10.2% of the total number of respondents. This Figure (Figure 4.2) indicated that the number of people between 31 and 40 years old is more.

Table 4.3 Marital status statistics table

Marital status	Frequency	Percent	Valid Percent	Cumulative Percent
Married	200	67.8	67.8	67.8
Unmarried	95	32.2	32.2	100
Total	295	100	100	

Source: the author

Figure 4.3 Marital status composition



Source: the author

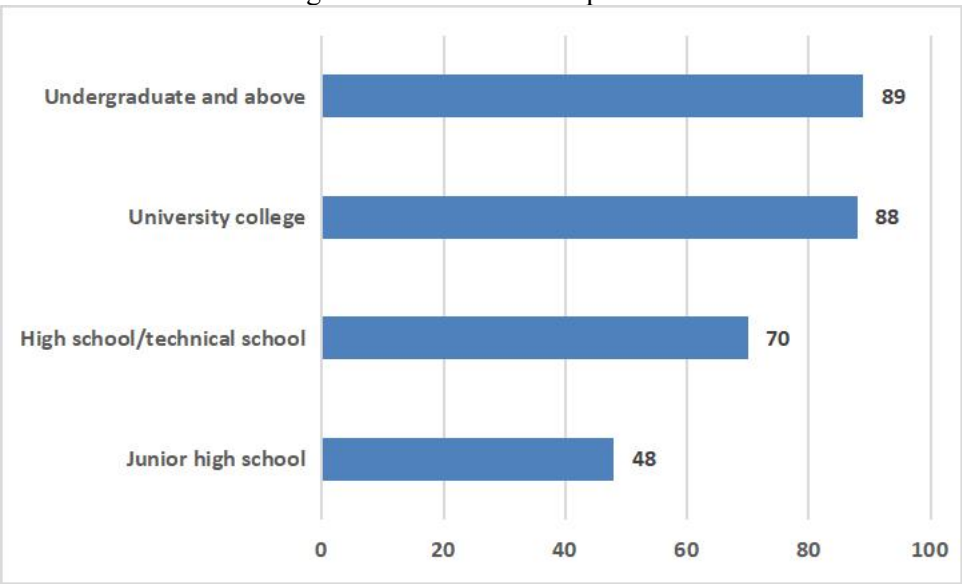
An analysis of the marital status of the surveyed subjects shows that there are 200 married people, accounting for 67.8% of the total number; there are 95 unmarried people, accounting for 32.2% of the total number, which means that the number of married people is a bit more.

Table 4.4 Highest education statistics table

Highest education	Frequency	Percent	Valid Percent	Cumulative Percent
Junior high school	48	16.3	16.3	16.3
High school/technical school	70	23.7	23.7	40
University college	88	29.8	29.8	69.8
Undergraduate and above	89	30.2	30.2	100
Total	295	100	100	

Source: the author

Figure 4.4 Education composition



Source: the author

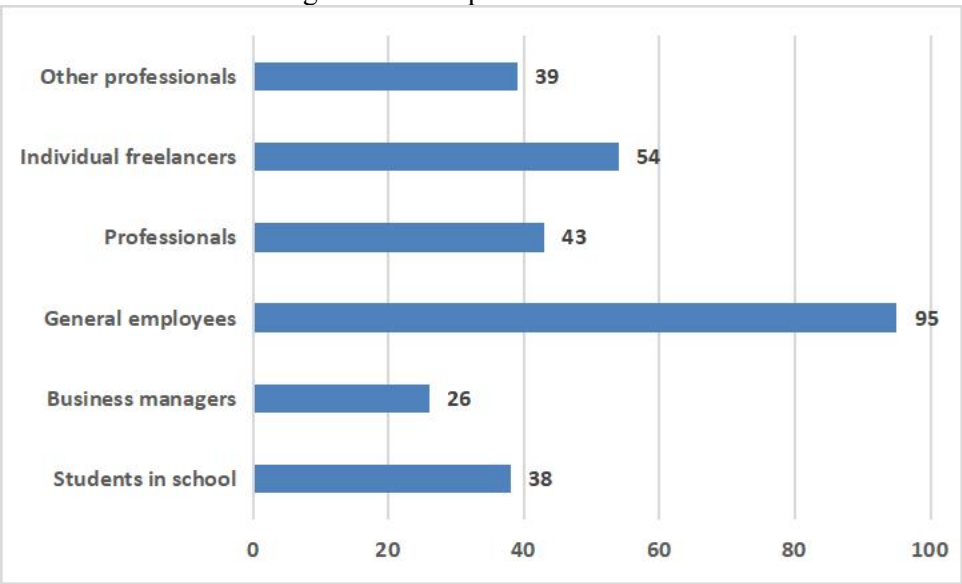
Analyzing, the highest education composition of the surveyed respondents there are 48 junior high school students, accounting for 16.3% of the total number; 70 high school students, accounting for 23.7% of the total number; 88 college students, accounting for 29.8% of the total number; 89 college students and above, accounting for 30.2% of the total number. This means that the number of people with a bachelor's degree or above is a bit more.

Table 4.5 Occupational Composition Statistics Table

Occupation Type	Frequency	Percent	Valid Percent	Cumulative Percent
Students in school	38	12.9	12.9	12.9
Business managers	26	8.8	8.8	21.7
General employees	95	32.2	32.2	53.9
Professionals	43	14.6	14.6	68.5
Individual freelancers	54	18.3	18.3	86.8
Other professionals	39	13.2	13.2	100
Total	295	100	100	

Source: the author

Figure 4.5 Occupation distribution



Source: the author

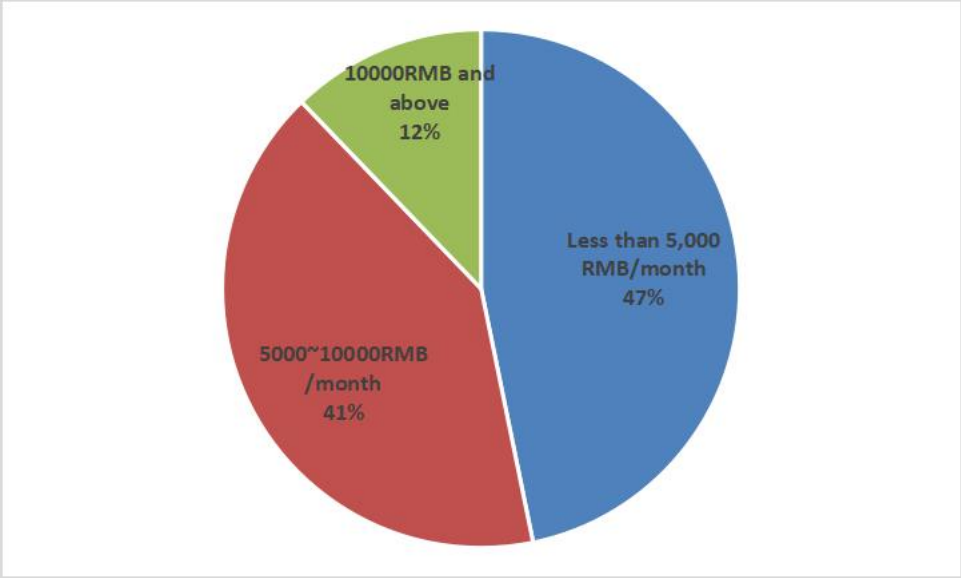
An analysis of the occupational composition of the respondents shows that there are 38 students (12.9% of the total), 26 managers (8.8% of the total), 95 general employees (32.2%), 43 professionals (14.6%), 54 freelancers (18.3%), and 39 other professionals (13.2%). The number of workers in other professions was 39, accounting for 13.2% of the total number of workers. This means that the number of general employees and workers is relatively high.

Table 4.6 Income range composition statistics table

Income range	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 5,000 RMB/month	138	46.8	46.8	46.8
5000~10000RMB/month	121	41	41	87.8
10000RMB and above	36	12.2	12.2	100
Total	295	100	100	

Source: the author

Figure 4.6 Income distribution



Source: the author

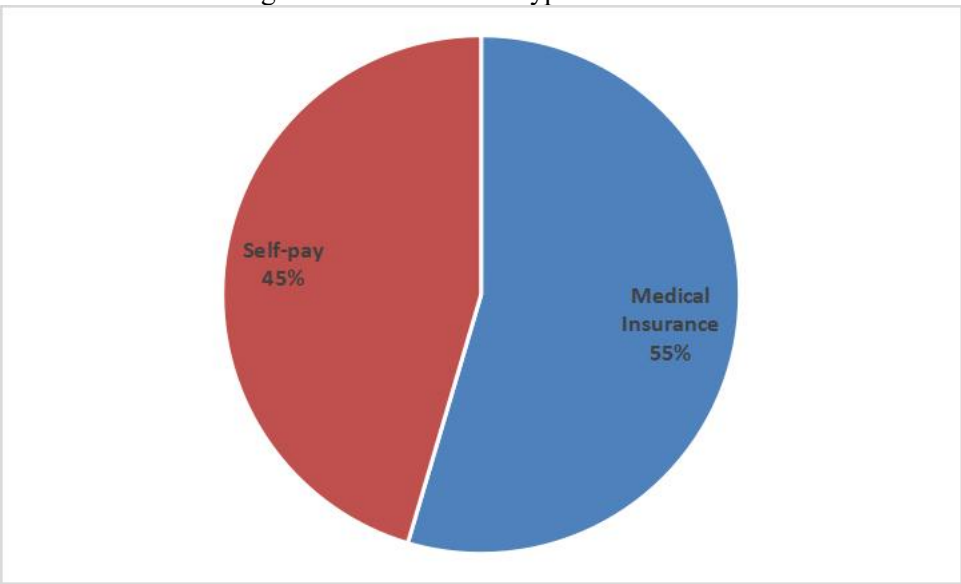
Analyzing the composition of the income range of the respondents, 138 people (46.8% of the total) had an income of less than RMB 5,000/month, 121 people (41.0% of the total) had an income of RMB 5,000~10,000/month, and 36 people (12.2% of the total) had an income of RMB 10,000 and above. It means that the number of people with an income of RMB 5,000~10,000/month is more.

Table 4.7 Statistical table of the composition of the type of consultation and settlement

the type of consultation and settlement	Frequency	Percent	Valid Percent	Cumulative Percent
Medical Insurance	161	54.6	54.6	54.6
Self-pay	134	45.4	45.4	100
Total	295	100	100	

Source: the author

Figure 4.7 Consultation types distribution



Source: the author

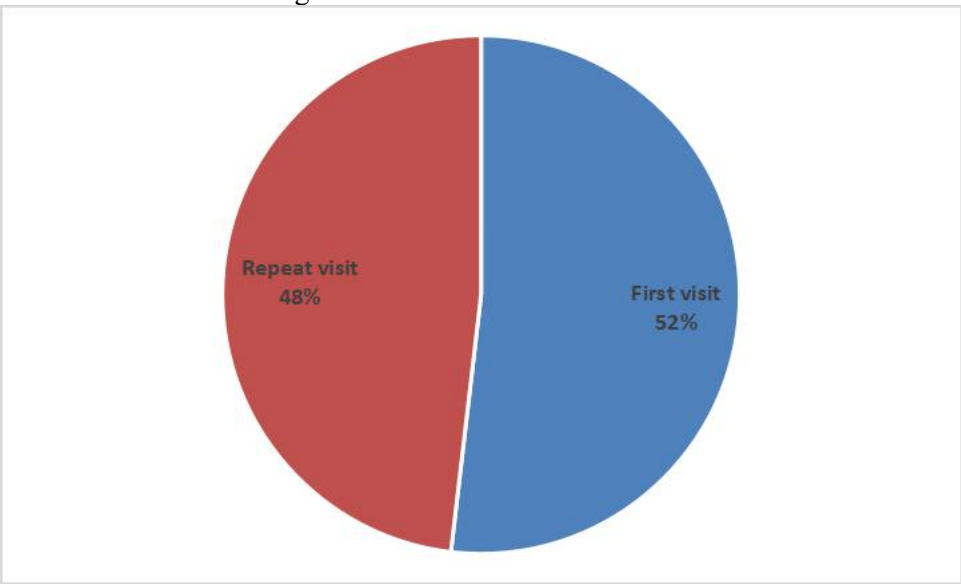
According to the analysis of the composition of the type of consultation and settlement of the respondents, there were 161 people with medical insurance, accounting for 54.6% of the total number of respondents, and 134 people with self-payment, accounting for 45.4% of the total number of respondents. It means that the number of medical insurance is 10% more than the number of respondents.

Table 4.8 Number of visits statistics table

Number of visits	Frequency	Percent	Valid Percent	Cumulative Percent
First visit	153	51.9	51.9	51.9
Repeat visit	142	48.1	48.1	100
Total	295	100	100	

Source: the author

Figure 4.8 Visit number distribution



Source: the author

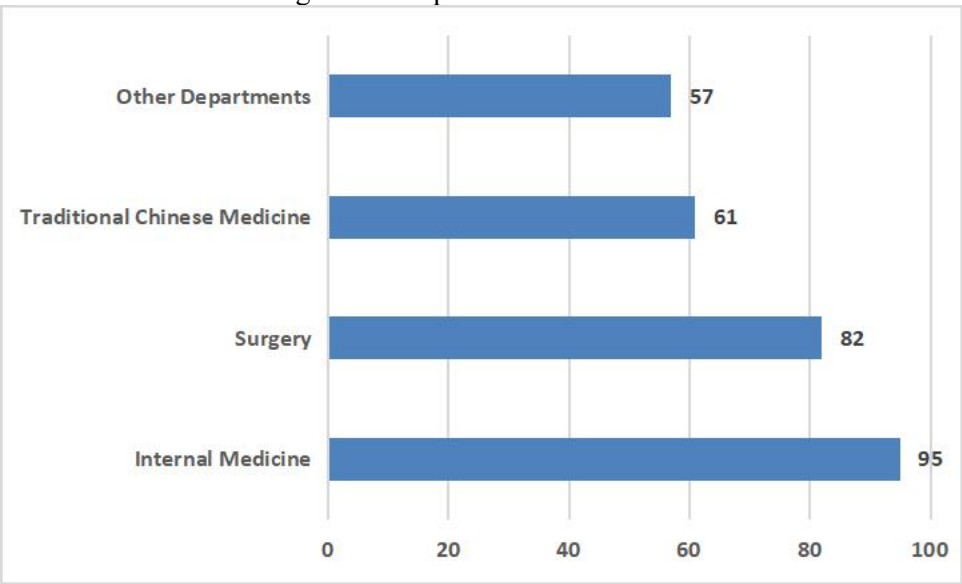
The composition of the surveyed patients' first visit was analyzed. 153 people (51.9% of the total) were first visits and 142 people (48.1% of the total) were follow-up visits. It means that the number of initial and follow-up consultations is relatively even.

Table 4.9 Statistical table of the composition of consultation departments

consultation departments	Frequency	Percent	Valid Percent	Cumulative Percent
Internal Medicine	95	32.2	32.2	32.2
Surgery	82	27.8	27.8	60
Traditional Chinese Medicine	61	20.7	20.7	80.7
Other Departments	57	19.3	19.3	100
Total	295	100	100	

Source: the author

Figure 4.9 Departments distribution



Source: the author

In the analysis of the composition of the surveyed subjects' consultation departments, there were 95 internal medicine patients (accounting for 32.2% of the total number) and 82 surgery patients (accounting for 27.8% of the total number). In addition, there were 61 Chinese medicine patients (accounting for 20.7% of the total number) and 57 other departments (accounting for 19.3% of the total number). It means that the number of medical consultations is more than that of internal medicine.

4.2. Analysis of differences

4.2.1. Analysis of the differences in the expectation value of each dimension

Table 4.10 Analysis of the differences in the expectations of each dimension in terms of gender

Dimensions	male （N=100）	female （N=195）	t	P
E_Tangible	4.825±0.372	4.744±0.462	1.635	0.103
E_Reliability	4.825±0.380	4.754±0.485	1.382	0.168
E_Responsiveness	4.812±0.408	4.737±0.461	1.421	0.157
E_Assurance	4.828±0.406	4.776±0.453	0.964	0.336
E_Empathy	4.820±0.428	4.761±0.470	1.090	0.277
Expectation（E）	4.822±0.371	4.752±0.446	1.421	0.157

Source: the author

In the table, E_Tangible is the expectation of Tangible dimension, E_Reliability is the expectation of Reliability dimension and so on. Since gender is divided into male and female levels, the results of the analysis with independent samples t-test show that the t-values of

E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, E_Empathy and Expectation (E) on gender are 1.635, 1.382, 1.421, 0.964, 1.090 and 1.421, whose corresponding p-values are greater than 0.05. That is, there is no differential effect of gender on E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, E_Empathy and Expectation (E), and the performance of each dimension is similar for each gender.

Table 4.11 Analysis of the differences in the expectations of each dimension in terms of age

Dimensions	Under 24 (N=73)	25~30 (N=56)	31~40 (N=104)	41~50 (N=32)	51 and above (N=30)	F	P
E_Tangible	4.779±0.405	4.783±0.417	4.740±0.500	4.729±0.414	4.883±0.297	0.716	0.581
E_Reliability	4.784±0.44	4.808±0.402	4.743±0.524	4.734±0.462	4.875±0.261	0.638	0.636
E_Responsiveness	4.778±0.428	4.746±0.449	4.756±0.480	4.694±0.454	4.853±0.332	0.548	0.700
E_Assurance	4.791±0.449	4.777±0.461	4.796±0.454	4.758±0.433	4.858±0.313	0.237	0.917
E_Empathy	4.740±0.498	4.774±0.459	4.779±0.482	4.781±0.375	4.900±0.317	0.661	0.620
Expectation（E）	4.776±0.411	4.777±0.418	4.760±0.473	4.734±0.413	4.873±0.268	0.506	0.731

Source: the author

Since age is divided into five levels: under 24, 25-30, 31-40, 41-50, and 51+, using one-way ANOVA, the results show that E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, E_Empathy, and Expectation (E) have F-values of 0.716, 0.638, 0.548, 0.237, 0.661 and 0.506 for age, respectively, and their corresponding p-values are greater than 0.05, indicating that they do not reach a statistically significant difference. That is, there is no differential effect of age on E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, E_Empathy, and Expectation (E).E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, E_Empathy, and Expectation (E) were about the same across ages.

Table 4.12 Analysis of the differences in the expectations of each dimension on marital status

Dimensions	Married （N=200）	Unmarried （N=95）	t	P
E_Tangible	4.768±0.452	4.777±0.398	-0.163	0.870
E_Reliability	4.769±0.470	4.797±0.415	-0.507	0.613
E_Responsiveness	4.748±0.459	4.794±0.412	-0.825	0.410
E_Assurance	4.786±0.453	4.808±0.405	-0.397	0.692
E_Empathy	4.787±0.462	4.768±0.446	0.321	0.749
Expectation（E）	4.770±0.439	4.789±0.387	-0.369	0.713

Source: the author

Since marital status is divided into two levels, married and unmarried, the results of the analysis using independent samples t-test revealed that the t-values of E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, E_Empathy and Expectation (E) on marital statuses are: - 0.163, -0.507, -0.825, -0.397, 0.321, and -0.369, which correspond to p-values greater than 0.05, indicating that statistically significant differences were not reached. That is, there is no differential effect of different marital statuses on E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, E_Empathy and Expectation (E), and the performance of each dimension on marital status is similar.

Table 4.13 The analysis of the difference of the expectation of each dimension on the highest education

Dimensions	Junior high school （N=48）	technical school （N=70）	University college （N=88）	Undergraduate and above （N=89）	F	p
E_Tangible	4.753±0.536	4.852±0.318	4.777±0.381	4.712±0.497	1.407	0.241
E_Reliability	4.729±0.572	4.850±0.342	4.793±0.392	4.733±0.508	1.100	0.349
E_Responsiveness	4.733±0.514	4.803±0.377	4.761±0.434	4.748±0.468	0.290	0.833
E_Assurance	4.766±0.519	4.839±0.338	4.770±0.438	4.795±0.462	0.404	0.750
E_Empathy	4.785±0.535	4.814±0.383	4.765±0.438	4.768±0.486	0.184	0.907
Expectation （E）	4.751±0.521	4.833±0.326	4.773±0.392	4.747±0.461	0.624	0.600

Source: the author

Since the highest education is divided into four levels: junior high school, high school, university college, and bachelor and above, using one-way ANOVA, the results show that E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, E_Empathy, and Expectation (E) on the highest education The F-values on the highest education are 1.407, 1.100, 0.290, 0.404, 0.184 and 0.624, respectively, and their corresponding p-values are greater than 0.05, which means that they do not reach a statistically significant difference. That is, there is no differential effect of different highest education on E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, E_Empathy and Expectation (E).E_Tangible, E_Reliability, E_ Responsiveness, E_Assurance, E_Empathy, and Expectation (E) are about the same across the highest degree.

Table 4.14 Analysis of the differences in the expectations of each dimension across Occupations

Dimensions	Students in school （N=38）	Business managers （ N=26 ）	General employees （N=95）	Professionals （N=43）	Individual freelancers （N=54）	Other professionals （N=39）	F	p
E_Tangible	4.833± 0.293	4.737± 0.414	4.733± 0.484	4.709±0.527	4.815± 0.408	4.833±0.359	0.77	0.572
E_Reliability	4.868± 0.271	4.760± 0.444	4.729± 0.515	4.733±0.519	4.829± 0.394	4.801±0.437	0.775	0.568
E_Responsiveness	4.847± 0.313	4.738± 0.462	4.697± 0.506	4.721±0.490	4.815± 0.386	4.831±0.393	1.119	0.350
E_Assurance	4.895± 0.264	4.808± 0.356	4.724± 0.506	4.791±0.478	4.815± 0.443	4.827±0.381	0.967	0.438
E_Empathy	4.842± 0.353	4.808± 0.379	4.712± 0.518	4.775±0.470	4.827± 0.461	4.812±0.410	0.73	0.601
Expectation （E）	4.855± 0.264	4.764± 0.39	4.72± 0.488	4.74±0.479	4.819± 0.390	4.823±0.372	0.878	0.496

Source: the author

Since occupations are divided into six levels: school students, business managers, general staff workers, professionals, self-employed freelancers, and other professionals, using one-way ANOVA, the results show that E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, E_Empathy and Expectation (E) on occupation are 0.77, 0.775, 1.119, 0.967, 0.73 and 0.878, respectively, and their corresponding p-values are greater than 0.05, indicating that they do not reach statistically significant differences. That is, there is no differential effect of different occupations on E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, E_Empathy and Expectation (E).E_Tangible, E_Reliability, E_ Responsiveness, E_Assurance, E_Empathy, and Expectation (E) are about the same across occupations.

Table 4.15 Analysis of the differences in monthly income for each dimension of Expectation

Dimensions	Less than 5,000 （N=138）	5000~10000 （N=121）	10000Rabove （N=36）	F	P
E_Tangible	4.804±0.448	4.738±0.436	4.755±0.377	0.773	0.463
E_Reliability	4.804±0.47	4.748±0.452	4.778±0.386	0.499	0.607
E_Responsiveness	4.799±0.433	4.716±0.458	4.783±0.439	1.166	0.313
E_Assurance	4.817±0.436	4.754±0.456	4.833±0.373	0.838	0.434
E_Empathy	4.79±0.472	4.741±0.474	4.880±0.300	1.335	0.265
Expectation （E）	4.803±0.434	4.738±0.429	4.797±0.355	0.816	0.443

Source: the author

Since monthly income is divided into three levels: less than $5,000/month, $5,000~$10,000/month, and $10,000 and above, using one-way ANOVA, the results show

that E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, E_Empathy, and Expectation (E) on monthly income have F-values of 0.773, 0.499, 1.166, 0.838, 1.335 and 0.816, respectively, and their corresponding p-values are greater than 0.05, indicating that they do not reach a statistically significant difference. That is, there is no differential effect of different monthly income on E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, E_Empathy and Expectation (E).E_Tangible, E_Reliability, E_ Responsiveness, E_Assurance, E_Empathy, and Expectation (E) are about the same across monthly income.

Table 4.16 Analysis of the differences in expectations across dimensions on the type of visit settlement

Dimensions	Medical Insurance （N=161）	Self-pay （N=134）	t	
E_Tangible	4.742±0.458	4.806±0.405	-1.269	0.205
E_Reliability	4.748±0.468	4.813±0.432	-1.229	0.220
E_Responsiveness	4.732±0.470	4.800±0.410	-1.333	0.184
E_Assurance	4.761±0.454	4.832±0.414	-1.406	0.161
E_Empathy	4.756±0.471	4.811±0.437	-1.036	0.301
Expectation（E）	4.746±0.446	4.811±0.392	-1.337	0.182

Source: the author

Since the type of visit settlement is divided into two levels of medical insurance and self-payment, the results of the analysis with independent sample t-test show that the t-values of E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, E_Empathy and Expectation (E) on the type of visit settlement are were -1.269, -1.229, -1.333, -1.406, -1.036, and -1.337, with p-values greater than 0.05, indicating that statistically significant differences were not reached. That is, there is no differential effect of different visit settlement types on E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, E_Empathy, and Expectation (E), and each dimension performs similarly on visit settlement types.

Table 4.17 Analysis of the difference between the expectations of each dimension on whether it is the first visit

Dimensions	First visit （N=153）	Repeat visit （N=142）	t	P
E_Tangible	4.735±0.456	4.810±0.409	-1.475	0.141
E_Reliability	4.743±0.475	4.815±0.426	-1.361	0.174
E_Responsiveness	4.719±0.484	4.810±0.394	-1.776	0.077
E_Assurance	4.752±0.482	4.838±0.380	-1.715	0.087
E_Empathy	4.728±0.504	4.838±0.392	-2.108	0.036
Expectation（E）	4.735±0.455	4.820±0.382	-1.739	0.083

Source: the author

Since whether it was the first visit was divided into two levels, initial and follow-up, the analysis was performed by independent sample t-test, and the results showed that the t-values of E_Tangible, E_Reliability, E_Responsiveness, and E_Assurance on whether it was the first visit were -1.475, -1.361, - 1.776, -1.715, -2.108, and -1.739, respectively, with p-values greater than 0.05, indicating that no statistically significant differences were reached. That is, whether it was the first visit or not had no differential effect on E_Tangible, E_Reliability, E_Responsiveness, and E_Assurance, and the performance of each dimension on whether it was the first visit or not was similar. However, the t-value for E_Empathy on whether it was the first visit was -2.108, which corresponds to a p-value of less than 0.05, indicating that a statistically significant difference was reached. This means that whether it was the first visit or not had a differential effect on E_Empathy and that the effect was greater for repeat visits than for initial visits.

Table 4.18 Analysis of the differences in the expectation values of each dimension by department of consultation

Dimensions	Internal Medicine (N=95)	Surgery (N=82)	Traditional Chinese Medicine （N=61）	Other Departments （N=57）	F	P
E_Tangible	4.688± 0.487	4.785± 0.452	4.888±0.252	4.766±0.452	2.709	0.045
E_Reliability	4.689± 0.515	4.799± 0.429	4.898±0.268	4.768±0.506	2.747	0.043
E_Responsiveness	4.674± 0.493	4.756± 0.471	4.866±0.303	4.811±0.427	2.631	0.05
E_Assurance	4.695± 0.491	4.774± 0.484	4.959±0.153	4.807±0.436	4.772	0.003
E_Empathy	4.688± 0.498	4.748± 0.525	4.967±0.117	4.784±0.456	5.059	0.002
Expectation （E）	4.686± 0.469	4.774± 0.456	4.908±0.197	4.786±0.439	3.526	0.015

Source: the author

Since the consultation departments were divided into four levels: medical, surgical, Chinese medicine and other departments, the results of the one-way ANOVA showed that the F-values of E_Tangible, E_Reliability, E_Assurance, E_Empathy and Expectation (E) on the consultation departments were 0.773, 0.499, 1.166, 0.838, 1.335, and 0.816, respectively, with all the p-values indicating that statistically significant differences were achieved as they are less than 0.05. That is to say that there is a differential effect of different consultation departments on E_Tangible, E_Reliability, E_Assurance, E_Empathy and Expectation (E).

From the mean values, it can be seen that the Chinese medicine department has the greatest effect on E_Tangible, E_Reliability, E_Assurance, E_Empathy and Expectation (E). However, the F-value of E_Responsiveness of the consultation department was 2.631, which corresponds to a p-value greater than 0.05, indicating that a statistically significant difference was not reached, which means that the performance of different consultation departments on E_Responsiveness was similar.

4.2.2 Analysis of the differences in the perceived values of the dimensions

Table 4.19 Analysis of the differences in the perceived value of each dimension by gender

Dimensions	man （N=100）	female （N=195）	t	P
P_Tangible	4.752±0.454	4.666±0.516	1.468	0.143
P_Reliability	4.745±0.454	4.669±0.532	1.279	0.202
P_Responsiveness	4.684±0.542	4.636±0.535	0.727	0.468
P_Assurance	4.743±0.524	4.722±0.494	0.334	0.739
P_Empathy	4.733±0.51	4.723±0.491	0.168	0.867
Perception（P）	4.731±0.464	4.678±0.492	0.897	0.37

Source: the author

In the table, P_Tangible is the perception of the Tangible dimension, P_Reliability is the perception of the Reliability dimension and so on. Since gender is divided into two levels, male and female, the results of the independent sample t-test analysis showed that the t-values of P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, and P_Empathy by gender were 1.468, 1.279, 0.727, 0.334, 0.168, and 0.897, which all correspond to a p-value greater than 0.05, indicating that statistically significant differences were not reached. That is, there is no differential effect of gender on P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, and P_Empathy, and the performance of each dimension is similar by gender.

Table 4.20 Analysis of the difference in the perceived value of each dimension in terms of age

Dimensions	Under 24 (N=73)	25~30 (N=56)	31~40 (N=104)	41~50（N=32）	51 and above （N=30）	F	P
P_Tangible	4.724±0.446	4.667±0.545	4.716±0.505	4.594±0.522	4.711±0.475	0.492	0.741
P_Reliability	4.747±0.426	4.705±0.514	4.697±0.533	4.586±0.545	4.658±0.559	0.601	0.663
P_Responsiveness	4.726±0.453	4.607±0.558	4.706±0.521	4.469±0.642	4.567±0.592	1.846	0.12
P_Assurance	4.753±0.452	4.714±0.487	4.776±0.491	4.609±0.612	4.658±0.57	0.883	0.474
P_Empathy	4.767±0.46	4.714±0.506	4.744±0.499	4.625±0.56	4.7±0.506	0.513	0.726
Perception（P）	4.74±0.41	4.675±0.502	4.725±0.488	4.571±0.556	4.658±0.512	0.852	0.494

Source: the author

Since age is divided into five levels: under 24, 25-30, 31-40, 41-50, and 51+, the results of the one-way ANOVA showed that P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, P_Empathy, and Perception (P) have F-values for age: 0.492, 0.601, 1.846, 0.883, 0.513 and 0.852, respectively, and their corresponding p-values are greater than 0.05, indicating that they do not reach statistically significant differences. That is, there is no differential effect of age on P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, P_Empathy and Perception (P). p_Tangible, P_Reliability, P_ Responsiveness, P_Assurance, P_Empathy, and Perception (P) were about the same across ages.

Table 4.21 Analysis of the differences in the perceived values of each dimension on marital status

Dimensions	Married （N=200）	Unmarried （N=95）	t	P
P_Tangible	4.686±0.512	4.714±0.463	-0.455	0.649
P_Reliability	4.688±0.53	4.711±0.459	-0.364	0.716
P_Responsiveness	4.626±0.572	4.707±0.454	-1.32	0.188
P_Assurance	4.711±0.537	4.766±0.425	-0.869	0.386
P_Empathy	4.718±0.512	4.744±0.465	-0.412	0.681
Perception（P）	4.682±0.511	4.725±0.419	-0.78	0.436

Source: the author

Since marital status is divided into two levels: married and unmarried, the results of the analysis with independent samples t-test revealed that the t-values of P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, P_Empathy, and Perception (P) on marital status are: - 0.455, -0.364, -1.32, -0.869, -0.412, and -0.78, which correspond to p-values greater than 0.05, indicating that statistically significant differences were not reached. That is,

there is no differential effect of different marital statuses on P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, P_Empathy, and Perception (P), and each dimension performs similarly on marital status.

Table 4.22 Analysis of the differences in perceived values of each dimension on the highest education

Dimensions	Junior high school （N=48）	technical school （N=70）	University college （N=88）	Undergraduate and above （N=89）	F	P
P_Tangible	4.677±0.534	4.776±0.416	4.72±0.464	4.616±0.556	1.474	0.222
P_Reliability	4.651±0.538	4.754±0.479	4.724±0.439	4.643±0.573	0.837	0.474
P_Responsiveness	4.563±0.61	4.711±0.499	4.714±0.471	4.593±0.58	1.478	0.221
P_Assurance	4.688±0.561	4.764±0.478	4.75±0.444	4.702±0.55	0.356	0.785
P_Empathy	4.708±0.522	4.743±0.465	4.742±0.457	4.708±0.55	0.117	0.95
Perception （P）	4.652±0.535	4.751±0.449	4.728±0.429	4.644±0.528	0.899	0.442

Source: the author

Since the highest education is divided into four levels: junior high school, high school, university college, and bachelor and above, using one-way ANOVA, the results show that P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, P_Empathy, and Perception (P) on the highest education The F-values are 1.474, 0.837, 1.478, 0.356, 0.117 and 0.899, respectively, and their corresponding p-values are greater than 0.05, indicating that they do not reach statistically significant differences. That is, there is no differential effect of different highest education on P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, P_Empathy and Perception (P). p_Tangible, P_Reliability, P_ Responsiveness, P_Assurance, P_Empathy, and Perception (P) are about the same across the highest education level.

Table 4.23 Analysis of the differences in the perceived values of each dimension across occupations

Dimensions	Students in school （N=38）	Business managers （N=26）	General employees （N=95）	Professionals （N=43）	Individual freelancers （N=54）	Other professionals （N=39）	F	P
P_Tangible	4.746±0.369	4.615±0.571	4.691±0.494	4.659±0.582	4.71±0.501	4.726±0.471	0.297	0.914
P_Reliability	4.796±0.358	4.683±0.577	4.692±0.512	4.634±0.583	4.681±0.51	4.699±0.494	0.436	0.824
P_Responsiveness	4.742±0.431	4.585±0.676	4.627±0.527	4.591±0.602	4.685±0.528	4.692±0.504	0.528	0.755
P_Assurance	4.809±0.374	4.673±0.655	4.679±0.532	4.767±0.498	4.764±0.469	4.718±0.494	0.546	0.741
P_Empathy	4.833±0.327	4.628±0.669	4.681±0.537	4.736±0.507	4.759±0.469	4.744±0.429	0.773	0.57
Perception （P）	4.778±0.334	4.633±0.586	4.673±0.498	4.669±0.532	4.715±0.476	4.714±0.463	0.399	0.849

Source: the author

Since occupations are divided into six levels: school students, business managers, general staff workers, professionals, freelancers and other professionals, the results of the one-way ANOVA show that P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, P_Empathy and Perception (P) on occupation are 0.297, 0.436, 0.528, 0.546, 0.773 and 0.399, respectively, and their corresponding p-values are greater than 0.05, indicating that they do not reach statistically significant differences. That is, there is no differential effect of different occupations on P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, P_Empathy and Perception (P). p_Tangible, P_Reliability, P_ Responsiveness, P_Assurance, P_Empathy, and Perception (P) are about the same across occupations.

Table 4.24 Analysis of the differences in perceived values of each dimension on monthly income

Dimensions	Less than 5,000RMB （N=138）	5000~10000 RMB （N=121）	RMB10000above （N=36）	F	P
P_Tangible	4.768±0.455	4.606±0.529	4.713±0.5	3.523	0.031
P_Reliability	4.775±0.46	4.597±0.541	4.715±0.518	4.097	0.018
P_Responsiveness	4.739±0.47	4.56±0.558	4.628±0.658	3.68	0.026
P_Assurance	4.777±0.459	4.667±0.527	4.75±0.576	1.575	0.209
P_Empathy	4.79±0.45	4.636±0.532	4.787±0.511	3.435	0.034
Perception （P）	4.767±0.439	4.609±0.505	4.711±0.531	3.539	0.030

Source: the author

Since monthly income is divided into three levels: less than RMB5,000/month, RMB5,000~RMB10,000/month, and RMB10,000 and above, using one-way ANOVA, the results show that P_Tangible, P_Reliability, P_Responsiveness, P_Empathy, and Perception (P) on F-values on monthly income are 3.523, 4.097, 3.68, 3.435 and 3.539, respectively, and their corresponding p-values are less than 0.05, indicating that statistically significant differences are reached. That is to say that different monthly incomes have a differential

effect on P_Tangible, P_Reliability, P_Responsiveness, P_Empathy and Perception (P). From the mean values, it can be seen that below $5000/month has the greatest effect on P_Tangible, P_Reliability, P_Responsiveness, P_Empathy and Perception (P). However, P_Assurance has an F-value of 1.575 on monthly income, which corresponds to a p-value greater than 0.05, indicating that a statistically significant difference is not reached. p_Assurance performs similarly across monthly income.

Table 4.25 Analysis of the differences in perceived values of each dimension on the type of visit settlement

Dimensions	Medical Insurance（N=161）	Self-pay（N=134）	t	P
P_Tangible	4.671±0.517	4.724±0.471	-0.914	0.361
P_Reliability	4.671±0.526	4.724±0.484	-0.894	0.372
P_Responsiveness	4.624±0.546	4.687±0.526	-1.002	0.317
P_Assurance	4.703±0.513	4.759±0.492	-0.949	0.343
P_Empathy	4.683±0.521	4.779±0.462	-1.664	0.097
Perception（P）	4.668±0.498	4.729±0.463	-1.092	0.276

Source: the author

Since the type of visit settlement is divided into two levels of medical insurance and self-payment, the results of the analysis with independent sample t-test revealed that the t-values of P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, P_Empathy and Perception (P) on the type of visit settlement are The p-values are greater than 0.05, indicating that the differences are not statistically significant. That is, there is no differential effect of different visit settlement types on P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, P_Empathy, and Perception (P), and the performance of each dimension is similar for visit settlement types.

Table 4.26 Analysis of the differences in perception values of each dimension on whether it is the first visit to our hospital

Dimensions	First visit（N=153）	Repeat visit（N=142）	t	P
P_Tangible	4.698±0.489	4.691±0.506	0.12	0.905
P_Reliability	4.701±0.49	4.688±0.527	0.213	0.832
P_Responsiveness	4.672±0.521	4.631±0.555	0.653	0.514
P_Assurance	4.73±0.492	4.727±0.517	0.056	0.956
P_Empathy	4.712±0.504	4.742±0.49	-0.506	0.613
Perception（P）	4.701±0.471	4.69±0.497	0.179	0.858

Source: the author

Since whether it was the first visit was divided into two levels, initial and follow-up, the analysis was performed by independent sample t-test, and the results showed that the t-values of P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, P_Empathy and Perception (P) on the type of billing for the visit were 0.12, 0.213, 0.653, 0.056, -0.506, and 0.179, respectively, with p-values greater than 0.05, indicating that statistically significant differences were not reached. That is, whether it was the first visit or not had no differential effect on P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, P_Empathy and Perception (P), and each dimension performed similarly on whether it was the first visit or not.

Table 4.27 Analysis of the differences in perception values of each dimension on the department of visit

Dimensions	Internal Medicine（N=95）	Surgery（N=82）	Traditional Chinese Medicine（N=61）	Other Departments（N=57）	F	P
P_Tangible	4.589±0.571	4.697±0.491	4.833±0.339	4.719±0.484	3.123	0.026
P_Reliability	4.579±0.591	4.723±0.475	4.795±0.389	4.741±0.491	2.734	0.044
P_Responsiveness	4.56±0.561	4.637±0.537	4.744±0.5	4.73±0.522	1.969	0.119
P_Assurance	4.632±0.556	4.707±0.53	4.877±0.367	4.763±0.469	3.148	0.025
P_Empathy	4.618±0.581	4.72±0.514	4.874±0.323	4.76±0.435	3.501	0.016
Perception（P）	4.592±0.536	4.693±0.491	4.82±0.353	4.739±0.471	3.008	0.031

Source: the author

Since the consultation departments were divided into four levels: medical, surgical, Chinese medicine and other departments, the results of one-way ANOVA showed that the F-values of P_Tangible, P_Reliability, P_Assurance, P_Empathy and Perception (P) on the consultation departments were 3.123, 2.734, 3.148, 3.501 and 3.148, 3.501, and 3.008, respectively, with p-values less than 0.05, indicating that statistically significant differences were achieved. That is to say that there is a differential effect of different consultation departments on P_Tangible, P_Reliability, P_Assurance, P_Empathy and Perception (P). From the mean values, it can be seen that the Chinese medicine department has the greatest effect on P_Tangible, P_Reliability, P_Assurance, P_Empathy and Perception (P). However, E_Responsiveness had an F value of 1.969 for the consultation department, which corresponds to a p-value greater than 0.05, indicating that a statistically significant difference

was not reached, meaning that the performance of different consultation departments on E_Responsiveness was similar.

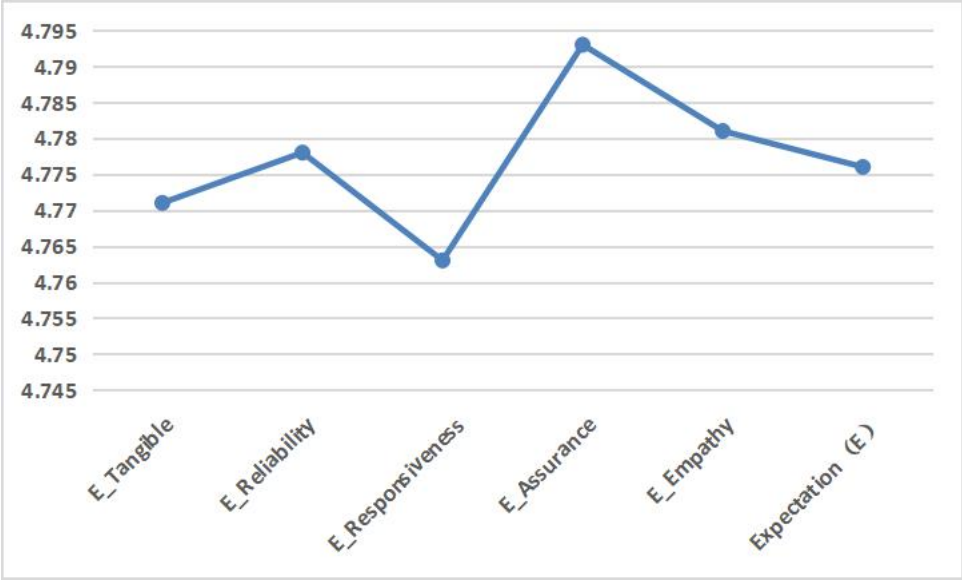
4.3 Analysis of overall expectations and perceptions

Table 4.28 Statistical table of the overall scores of the 6 dimensions of expectations（n=295, M±S）

Dimensions	Min	Max	M±S	Rank
E_Tangible	3	5	4.771±0.44	4
E_Reliability	3	5	4.778±0.45	3
E_Responsiveness	3	5	4.763±0.44	5
E_Assurance	3	5	4.793±0.44	1
E_Empathy	3	5	4.781±0.46	2
Expectation（E）	3	5	4.776±0.42	

Source: the author

Figure 4.10 Statistical table of the overall scores of the 6 dimensions of expectations（n=295, M±S）



Source: the author

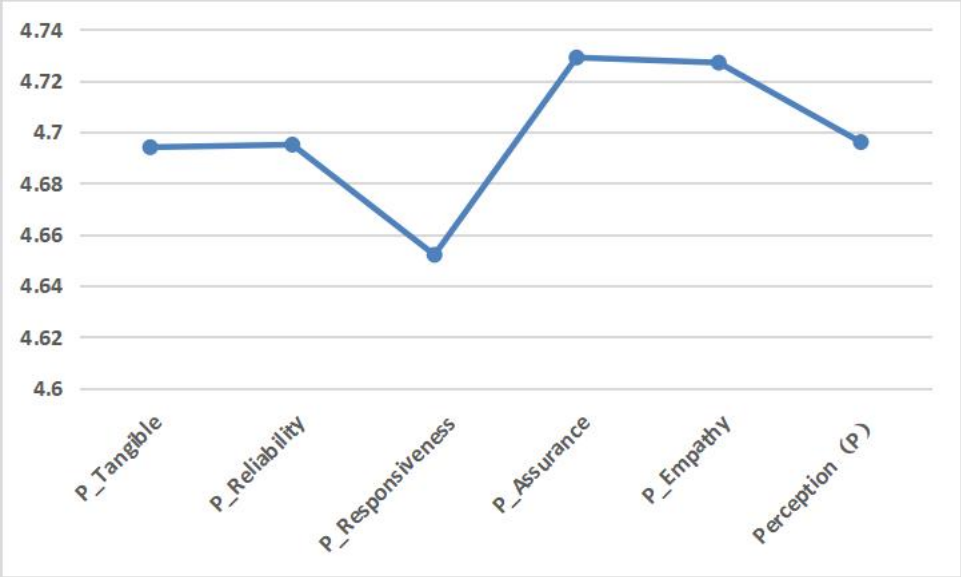
The results of the expectations of the investigated dimensions E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, E_Empathy and Expectation (E), show that the mean value is higher than the mean value of E_Assurance is the highest, followed by E_Empathy, E_Reliability, E_Tangible, and E_Responsiveness, which indicates that outpatient expected that the medical staff has solid knowledge and skills to ensure quality care, attitude toward patients, and trustworthiness.

Table 4.29 Overall scores of the 6 dimensions of perception（n=295, M±S）

Dimensions	Min	Max	M±S	Rank
P_Tangible	3	5	4.694±0.5	4
P_Reliability	3	5	4.695±0.51	3
P_Responsiveness	3	5	4.652±0.54	5
P_Assurance	3	5	4.729±0.5	1
P_Empathy	3	5	4.727±0.5	2
Perception（P）	3	5	4.696±0.48	

Source: the author

Figure 4.11 Statistical table of the overall scores of the 6 dimensions of perception（n=295, M±S）



Source: the author

The perceived values of the investigated dimensions P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, P_Empathy and Perception (P), which are also responses to the service of medical services, show that the mean value of E_Assurance is also the highest, followed by E_Empathy, E_Reliability, E_Tangible and E_Responsiveness, which indicate that actually the medical staff has relatively solid knowledge and skills to ensure the provision of quality care, attitude toward patients and trust.

4.4 Analysis of Gaps between expectations and perceptions within each dimension

Table 4.30 Tangible Dimensional Expectations and Perceived Value Score Statistics Table

Expectation					Perception							
Dimensions	Min	Max	M±S	Rank	Dimensions	Min	Max	M±S	Rank	Gaps	T	p
Tangible_E1	3	5	4.75±0.5	5	Tangible_P1	3	5	4.678±0.567	4	-0.071	2.980	0.003
Tangible_E2	3	5	4.766±0.477	4	Tangible_P2	3	5	4.725±0.518	2	-0.041	2.205	0.028
Tangible_E3	2	5	4.824±0.455	1	Tangible_P3	3	5	4.766±0.491	1	-0.058	2.910	0.004
Tangible_E4	2	5	4.756±0.529	6	Tangible_P4	2	5	4.641±0.606	5	-0.115	4.615	0.000
Tangible_E5	3	5	4.766±0.498	3	Tangible_P5	3	5	4.681±0.572	3	-0.085	3.725	0.000
Tangible_E6	2	5	4.766±0.511	2	Tangible_P6	2	5	4.678±0.567	4	-0.088	3.758	0.000

Source: the author

By analyzing the overall gap between the sub-dimensions of Expectation and Perceived Value, a more detailed understanding of the level of patient satisfaction with healthcare services can be obtained. On Tangible Dimensional, the results show that in terms of expectation, the highest expected value among the five sub-dimensions E1-E5 of the Tangible dimension is Tangible_E3, followed by Tangible_E6; the highest perceived value is Tangible_P3, followed by Tangible_P2. However, the largest difference between expectation and perception is the difference between Tangible_E4 and Tangible_P4, and the smallest one is between Tangible_E2 and Tangible_P2. It can be known that in the Tangible dimension, it is necessary to focus on the fourth sub-dimension of the Tangible, which is the quiet comfort of the consultation room.

Table 4.31 Reliability dimension expectation and perception score statistics table

Expectation					Perception							
Dimensions	Min	Max	M±S	Rank	Dimensions	Min	Max	M±S	Rank	Gaps	T	p
Reliability_E7	3	5	4.79±0.47	1	Reliability_P7	3	5	4.756±0.489	1	-0.034	1.833	0.068
Reliability_E8	3	5	4.776±0.478	2	Reliability_P8	2	5	4.702±0.553	2	-0.075	3.642	0.000
Reliability_E9	2	5	4.773±0.501	3	Reliability_P9	2	5	4.675±0.597	3	-0.098	3.560	0.000
Reliability_E10	2	5	4.773±0.501	3	Reliability_P10	2	5	4.647±0.581	4	-0.125	5.010	0.000

Source: the author

Similarly, on Reliability Dimensional, the results show that, in terms of expectation, among the four sub-scales E7-E10 of the Reliability dimension, the highest expected value is Reliability_E7, followed by Reliability_E8; the highest perceived value is Reliability_P7, followed by Reliability_P8. However, the difference between the expected value and the perceived value is the largest difference between Reliability_E10 and Reliability_P10, and the smallest difference is the difference between Reliability_E7 and Reliability_P7. It can be known that in the Reliability dimension, it is necessary to focus on the third sub-component of Reliability, i.e., the issue of patients having enough time to obtain detailed checkups and test examinations.

Table 4.32 Responsiveness dimension expectation and perception score statistics table

Expectation Dimensions	Min	Max	M±S	Rank	Perception Dimensions	Min	Max	M±S	Rank	Gaps	T	p
Responsiveness_E11	3	5	4.773 ±0.48	2	Responsiveness_P11	2	5	4.685 ±0.564	2	-0.088	3.610	0.000
Responsiveness_E12	3	5	4.759 ±0.508	4	Responsiveness_P12	2	5	4.654 ±0.63	4	-0.105	3.939	0.000
Responsiveness_E13	3	5	4.736 ±0.513	5	Responsiveness_P13	2	5	4.525 ±0.764	5	-0.210	5.408	0.000
Responsiveness_E14	3	5	4.786 ±0.442	1	Responsiveness_P14	3	5	4.715 ±0.515	1	-0.071	3.622	0.000
Responsiveness_E15	2	5	4.759 ±0.515	3	Responsiveness_P15	2	5	4.681 ±0.601	3	-0.078	2.888	0.004

Source: the author

Similarly, on the Responsiveness Dimensional, the results show that, in terms of expectation, among the five subscales E11-E15 of the Responsiveness dimension, the highest expected value is Responsiveness_E14, followed by Responsiveness_E11; the highest perceived value is However, the difference between the expected value and the perceived value is the largest difference between Responsiveness_E13 and Responsiveness_P13, and the smallest difference is the difference between Responsiveness_E14 and Responsiveness_P14. It can be known that in the Responsiveness dimension, it is necessary to focus on the third subset of Responsiveness, i.e., the patient waiting time below 30 minutes.

Table 4.33 Assurance dimension expectation and perception value score statistics table

Expectation					Perception						
Dimensions	Min	Max	M±S	Rank	Dimensions	Min	Max	M±S	Rank	Gaps	T	p
Assurance_E16	3	5	4.807±0.444	2	Assurance_P16	2	5	4.739±0.544	2	-0.068	3.057	0.002
Assurance_E17	3	5	4.817±0.46	1	Assurance_P17	3	5	4.753±0.512	1	-0.064	3.171	0.002
Assurance_E18	3	5	4.786±0.486	3	Assurance_P18	3	5	4.729±0.548	3	-0.058	2.910	0.004
Assurance_E19	3	5	4.763±0.493	4	Assurance_P19	2	5	4.695±0.579	4	-0.068	2.988	0.003

Source: the author

Similarly, on Assurance Dimensional, the results show that, in terms of expectation, the highest expected value among the five sub-components E16-E19 of the Assurance dimension is Assurance_E17, followed by Assurance_E16; the highest perceived value is Assurance_P17, followed by Assurance_P16. However, the difference between the expected value and perceived value has the largest distance between Assurance_E16 and Assurance_P16 and between Assurance_E19 and Assurance_P19, and the smallest difference is between Assurance_E18 and Assurance_P18. It can be known that in the Assurance dimension, it is necessary to focus on the first and fourth sub-scales of Assurance, i.e., the issue of medical personnel having solid and rich knowledge and skills to ensure the provision of quality treatment services and the issue of being able to receive clear and error-free diagnosis and treatment under existing conditions.

Table 4.34 Statistical Table of Expectation and Perceived Value Scores for Empathy Dimension

Expectation					Perception							
Dimensions	Min	Max	M±S	Rank	Dimensions	Min	Max	M±S	Rank	Gaps	T	p
Empathy_E20	2	5	4.769±0.503	3	Empathy_P20	2	5	4.715±0.572	2	-0.054	2.491	0.013
Empathy_E21	3	5	4.79±0.455	1	Empathy_P21	2	5	4.698±0.554	3	-0.092	3.869	0.000
Empathy_E22	3	5	4.783±0.474	2	Empathy_P22	3	5	4.766±0.477	1	-0.017	0.870	0.385

Source: the author

Similarly, on the Empathy Dimensional, the results showed that in terms of expectation, the highest expected value among the three sub-scales E20-E22 of the Empathy dimension was Empathy_E21, followed by Empathy_E22; the highest perception value was Empathy_P22, followed by Empathy_P21. However, the difference between the expected and perceived values, the greatest distance is the difference between Empathy_E21 and Empathy_P21, and the smallest difference is the difference between Empathy_E22 and Empathy_P22. It can be known that in the Empathy dimension, it is necessary to focus on the second sub-component of Empathy, i.e., the issue of health care professionals' attention and understanding of patients' needs.

4.5 SQ Analysis

4.5.1 SQ Analysis of Each Dimension

Table 4.35 Table for SQ analysis of each dimension

Dimensions	Expectation（M±S）	Rank	Perception（M±S）	Rank	Gaps	Rank
Tangible	4.771±0.44	3	4.694±0.5	4	-0.076	3
Reliability	4.778±0.45	5	4.695±0.51	3	-0.083	4
Responsiveness	4.763±0.44	1	4.652±0.54	5	-0.111	5
Assurance	4.793±0.44	2	4.729±0.5	1	-0.064	2
Empathy	4.781±0.46	4	4.727±0.5	2	-0.054	1
Overall satisfaction	4.776±0.42		4.696±0.48		-0.080	

Source: the author

The evaluation of the quality of medical services according to the SERVQUAL model is based on the SQ value, and the difference between the general expectation and the perceived value is the SQ value. SQ evaluation of service quality was performed for this data. The SQ values of the overall evaluation of expectations and perceptions and the ranking results show that the SQ values of each dimension are negative, indicating that there is still a certain gap between patients' expectations and perceptions of each dimension of service quality, which means that medical services do not meet the actual needs of patients to a certain extent.

Overall, in terms of absolute SQ values, the biggest gap between the expected and perceived values of each dimension is the Responsiveness dimension, so overall, there is a need to improve the operability of the appointment system, handle patient complaints in a timely

manner, improve the consultation time, improve the readiness of the information desk, and provide patients with easy-to-understand and sufficient medical information.

4.5.2 SQ Analysis of Each Question Item

Table 4.36 Table for SQ analysis of each question item

Dimensions	Expectation（E）	Rank	Perception (P)	Rank	Gaps	Rank
TangibleA1	4.75±0.5	5	4.678±0.567	4	-0.071	12
TangibleA2	4.766±0.477	4	4.725±0.518	2	-0.041	20
TangibleA3	4.824±0.455	1	4.766±0.491	1	-0.058	17
TangibleA4	4.756±0.529	6	4.641±0.606	5	-0.115	3
TangibleA5	4.766±0.498	3	4.681±0.572	3	-0.085	9
TangibleA6	4.766±0.511	2	4.678±0.567	4	-0.088	7
ReliabilityB1	4.79±0.47	1	4.756±0.489	1	-0.034	21
ReliabilityB2	4.776±0.478	2	4.702±0.553	2	-0.075	11
ReliabilityB3	4.773±0.501	3	4.675±0.597	3	-0.098	5
ReliabilityB4	4.773±0.501	3	4.647±0.581	4	-0.125	2
ResponsivenessC1	4.773±0.48	2	4.685±0.564	2	-0.088	8
ResponsivenessC2	4.759±0.508	4	4.654±0.63	4	-0.105	4
ResponsivenessC3	4.736±0.513	5	4.525±0.764	5	-0.210	1
ResponsivenessC4	4.786±0.442	1	4.715±0.515	1	-0.071	13
ResponsivenessC5	4.759±0.515	3	4.681±0.601	3	-0.078	10
AssuranceD1	4.807±0.444	2	4.739±0.544	2	-0.068	14
AssuranceD2	4.817±0.46	1	4.753±0.512	1	-0.064	16
AssuranceD3	4.786±0.486	3	4.729±0.548	3	-0.058	18
AssuranceD4	4.763±0.493	4	4.695±0.579	4	-0.068	15
EmpathyE1	4.769±0.503	3	4.715±0.572	2	-0.054	19
EmpathyE2	4.79±0.455	1	4.698±0.554	3	-0.092	6
EmpathyE3	4.783±0.474	2	4.766±0.477	1	-0.017	22

Source: the author

In order to understand in more detail the SQ gap between expected and perceived values for each question item under each dimension and to better understand the shortcomings of patient satisfaction with healthcare services, an SQ evaluation analysis of each option under each dimension is needed. The results showed that the largest SQ value for each question item was ResponsivenessC3, followed by ReliabilityB4, and finally TangibleA3. However, there are several areas where the gaps are relatively large. Therefore, it is important to focus on improving certain healthcare services to increase patient satisfaction. For example, the issue of waiting time below 30 minutes improves.

4.6 Regression Analysis

4.6.1 Regression of Expectation and Overall Satisfaction for Five Dimensions of Patients

Table 4.37 Correlation analysis of expectation of each dimension on overall satisfaction

	E_Tangible	E_Reliability	E_Responsiveness	E_Assurance	E_Empathy	General satisfaction
E_Tangible	1					
E_Reliability	0.914**	1				
E_Responsiveness	0.860**	0.905**	1			
E_Assurance	0.867**	0.894**	0.917**	1		
E_Empathy	0.837**	0.852**	0.869**	0.928**	1	
General satisfaction	0.729**	0.758**	0.738**	0.755**	0.747**	1

** Correlation is significant at the 0.01 level

Source: the author

Correlation analysis studies when one variable changes, how it triggers another variable to change, or whether another variable change. In this study, the Pearson correlation coefficient was used to analyze the correlations of E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, E_Empathy, and overall satisfaction, and the obtained correlation coefficients are shown in the table.

From the table, the correlation coefficients between E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, E_Empathy and overall satisfaction are 0.729, 0.758, 0.738, 0.755 and 0.747, respectively, which indicates that there is a significant correlation between E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, E_Empathy and overall satisfaction, and from the positive and negative correlation coefficients it can be concluded that E_Tangible, E_ Reliability, E_Responsiveness, E_Assurance, E_Empathy and overall satisfaction have a significant positive effect, that is, the higher the E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, E_ The higher the Empathy, the higher the overall satisfaction.

Table 4.38 Analysis of the influence of the expectation of each dimension on overall satisfaction

	Standardized Coefficients Beta	t	p	VIF
(Constant)		2.268	0.024	
E_Tangible	0.813	18.711	0.000	6.645
E_Reliability	0.82	19.911	0.000	9.393
E_Responsiveness	0.813	18.711	0.000	8.173
E_Assurance	0.845	19.72	0.000	12.051
E_Empathy	0.801	19.219	0.000	7.511
R	0.785			
R Square	0.616			
F	92.711			

Source: the author

In order to further study the degree of influence of the independent variables on the dependent variable, E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, and E_Empathy were used as independent variables and overall satisfaction was used as the dependent variable for multiple linear regression analysis, and in the process of this regression, the results from the table output show that, the coefficient of determination R2 of its independent variable and the dependent variable is 0.616, indicating that the independent variable can explain 61.6% of the dependent variable overall satisfaction. The F of the overall model in the predictive regression is 92.711 ($p<0.05$), which indicates that the regression model is valid from the overall perspective. As can be seen from the table, the standardized coefficients of the independent variables E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, and E_Empathy in the regression were 0.813, 0.820, 0.813, 0.845, and 0.801, respectively, and all of them reached the 0.05 level of significance. We can conclude that the independent variables (E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, and E_Empathy) have a significant predictive effect on the dependent variable (overall satisfaction).

Among them, E_Tangible, E_Reliability, E_Responsiveness, E_Assurance, and E_Empathy have a significant positive predictive effect on the overall satisfaction of the dependent variable.

4.6.2 Regression of Perception and overall satisfaction for the five dimensions of patients

Table 4.39 Correlation analysis of the perceived values of each dimension on overall satisfaction

	P_Tangible	P_Reliability	P_Responsiveness	P_Assurance	P_Empathy	General satisfaction
P_Tangible	1					
P_Reliability	0.897**	1				
P_Responsiveness	0.870**	0.896**	1			
P_Assurance	0.873**	0.884**	0.889**	1		
P_Empathy	0.820**	0.854**	0.826**	0.902**	1	
General satisfaction	0.795**	0.795**	0.776**	0.830**	0.791**	1

** Correlation is significant at the 0.01 level

Source: the author

Table 4.39 shows that the correlation coefficients between P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, P_Empathy and overall satisfaction were 0.795, 0.795, 0.776, 0.830 and 0.791, respectively, and the correlations were tested for significance. The results knew that the correlations are all significant at the 0.01 level, which indicates that there is a significant correlation between P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, P_Empathy and overall satisfaction, and from the positive and negative correlation coefficients it can be concluded that P_Tangible, P_ Reliability, P_Responsiveness, P_Assurance, P_Empathy and overall satisfaction have a significant positive effect, that is, the higher the P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, P_ Empathy, the higher the overall satisfaction.

Table 4.40 Analysis of the effect of perception of each dimension on overall satisfaction

	Standardized Coefficients Beta	t	p	VIF
(Constant)		4.327	0.000	
P_Tangible	0.784	22.472	0.000	6.253
P_Reliability	0.767	22.466	0.000	8.062
P_Responsiveness	0.707	21.049	0.000	6.733
P_Assurance	0.807	25.471	0.000	9.045
P_Empathy	0.779	22.12	0.000	5.834
R	0.847			
R Square	0.718			
F	147.092			

Source: the author

Similarly, multiple linear regression analysis was conducted with P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, and P_Empathy as independent variables and overall

satisfaction as dependent variables. It can be seen from the table output that the coefficient of determination R Square is 0.718, indicating that the five dimensions can explain 71.8% of the dependent variable overall satisfaction. The F of the overall model in the predictive regression is 147.092 ($p<0.05$), which indicates that the regression model is valid from the overall perspective. As can be seen from the table, the standardized coefficients of the independent variables P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, and P_Empathy in the regression were 0.784, 0.767, 0.707, 0.807, and 0.779, respectively, and all reached the 0.05 level of significance. Then it means that the independent variables P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, and P_Empathy have a significant predictive effect on the dependent variable overall satisfaction alone.

Among them, P_Tangible, P_Reliability, P_Responsiveness, P_Assurance, and P_Empathy have a significant positive predictive effect on the overall satisfaction of the dependent variable.

CHAPTER 5: CONCLUSION AND LIMITATION

5.1 Conclusion

Through the study of medical service quality, patient satisfaction and other related literature, combined with the specific situation and service status of the hospital, the general situation of the hospital is introduced, and then the outpatients of the hospital are surveyed based on the SERVQUAL scale, to find out the influencing factors of patient satisfaction in the hospital, analyze the service quality problems affecting patient satisfaction, and propose specific countermeasures for the improvement of patient satisfaction in the hospital for these problems. Based on these studies, the specific conclusions drawn in this dissertation are as follows:

1. Patients who are repeat visitors have higher empathy requirements.

2. In this study, all expectations were higher than perceptions of the quality of service provided, indicating that there is room for improvement in all aspects of quality.

3. Of the differences between perceived and expected values for 22 items, the largest difference in absolute values is the Responsiveness C3(-0.210), Reliability B4(-0.125) and TangibleA4(-0.115), they respectively represent adequate medical "Easy appointment system", “examination time” and "comfortable room", which means that hospital should improve its appointment system, ensure the examination time and make the more room comfortable.

4. Gaps in one dimension can create synergies with other dimensions of quality of service and lead to a decrease in those dimensions. Therefore, in addition to focusing on the dimensions with the largest gaps, service providers should also consider improvements in other dimensions.

5. From the results of regression analysis, we know that the perception of Assurance(0.807), Tangible(0.784) and Empathy(0.779) have the greatest impact on the most satisfaction dimension, and from the SQ analysis, we can know that the largest gap between the perceived value and the expected value are Responsiveness(-0.111),

Reliability(-0.083) and Tangible(-0.076). Combining the two above, in the five dimensions, what needs to be improved the most is Tangible because it not only has a larger gap, that is, the satisfaction is low, but also its perceived value has a greater impact on overall satisfaction.

5.2 Limitations

Limited to the long time requirements for the implementation of the research institute, coupled with the limitations of its own academic level, although this dissertation has achieved certain research results in the process of the research of the project, there are also some deficiencies, which are mainly reflected in the following aspects:

- It was conducted in a tertiary TCM hospital in southern China, where the aging attributes of different regions and sociocultural groups are different. Whether the recommendations made in this study can be extended to other hospitals is questionable.

- The recommendations drawn from this study should be used as a case study. The main objective of this study was to evaluate the satisfaction of outpatient clinics in the top three Traditional Chinese medicine hospitals. However, it does not necessarily apply to all medical institutions in the industry, there are certain limitations, and it is necessary to test the feasibility of implementation in other institutions in future research institutes, so that it has stronger adaptability, and promote the improvement of patient satisfaction and medical reform in the entire medical industry.

- The study covered only outpatient services, and sampling techniques facilitated sampling, limiting the generalizability of the results. We excluded the view of inpatients and service providers.

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