

PATIENT SATISFACTION SURVEY BASED ON SERVQUAL  
SCALE IN CHINA

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## **Abstract**

The satisfaction of healthcare service is an important factor in the competition of the hospital service market. And it is also the main condition for the private hospital, to survive in the fierce market competition, with the improvement of people's living standards, people have been changing attitudes and demands for healthcare services, even in the public hospitals. Nowadays the contradiction between healthcare staffs and patients is becoming increasingly serious in China, with distrust for the hospital and medical staff, the treatment does not understand by patients, and even appeared a number of violent incidents in hospital, which leads to a vicious circle between patients and the hospital. Therefore, the study of patient satisfaction and finding the root of the conflict has become the core and focus of healthcare services.

Under the patient-centered model, we adopt the SERVQUAL evaluation method is to judge the quality of service and customer satisfaction through evaluating the customer's expectation and perception.

The result shows that patients are satisfied with medical technology and medical equipments. But in healthcare caring, patients have a lot of complaints about hospitals. Patients hope that the hospital can provide treatment and services in time, and hope that the hospital will be more user-friendly. Patients feel disgusted with the absolute authority from doctors and nurses, hoping to get enough respect and attention. So we try to analyze the reason of the contradiction between healthcare staffs and patients, trying to explore the needs of patients for medical services, and put forward the corresponding medical solutions.

**Key Words:** healthcare service, patient satisfaction, the needs of patients, the tertiary hospital

JEF Classification System: I11, I12

## Resumo

A satisfação dos utentes dos serviços de saúde é um fator importante de competitividade hospitalar, nomeadamente em contexto privado.

Contudo, com a melhoria dos níveis de vida da população chinesa os utentes dos serviços de saúde têm vindo a tornar-se mais exigentes no que respeita à prestação dos cuidados de saúde, mesmo nos hospitais públicos.

Atualmente na China, os conflitos entre as equipas médicas e os doentes têm vindo a intensificar-se, dando mesmo lugar a um aumento significativo de incidentes violentos entre os doentes e os elementos das equipas médicas.

Neste contexto torna-se central gerir a satisfação dos utentes dos hospitais, nas suas diferentes dimensões. É este o propósito da presente investigação.

Adoptámos o modelo SERVQUAL para avaliar as expectativas e perceções dos utentes dos serviços de saúde.

O resultado mostra que os doentes estão satisfeitos com a tecnologia e equipamentos médicos existentes nos hospitais. Mas no que respeita à prestação de cuidados há muitas reclamações e expectativas não satisfeitas.

Nomeadamente quanto aos comportamentos autoritários das equipas médicas, frustrando as expectativas dos doentes de usufruírem de um ambiente hospitalar mais amigável e de serem objeto de mais respeito e atenção.

Neste estudo pretende-se identificar as dimensões em torno das quais os doentes avaliam a satisfação com os serviços prestados, identificando deste modo atuações possíveis para o seu solucionamento.

**Palavras-chave:** serviço de saúde, satisfação do paciente, necessidades dos pacientes, hospital terciário

Sistema de classificação JEF: I11, I12

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# **1. Introduction**

## **1.1 The background of the research**

With the rapid development of social economic civilization level of China and the improvement of people's life quality, people pay more and more attention to their own health and the requirement for hospitals become more diversified. Patients not only demand a high level of medical technologies, advanced medical equipment and the stable medical quality, but also care about the services of convenience, comfort, reliability and security.<sup>1</sup> But as a consequence of hospital reform in China started relatively late, the constraint of the traditional medical model, and the lack of modern comprehensive management knowledge of hospital managers and so on, those reasons cause tense doctor-patient relationship in Chinese society.

Nowadays, China is in the reform, hospitals face many challenges, such as the monopoly of public hospitals are broken, medical market from a seller's market to a buyer's market, the transformation of medical model, the doctor-patient relationship from the traditional active-passive to equal-collaborative, etc. But now there are still a lot of public hospitals only pay attention to quality through the technology of doctor, and they ignore the patients' own needs and feelings which led to escalating doctor-patient dispute. Therefore, medical organizations must change management concepts to adapt the change of external environment and apply the strategy of patient satisfaction. Hospitals truly make the "patient-centered" improve patient satisfaction and enhance the competitive ability of the medical market.

Patient satisfaction is an important index to evaluate hospital management and it is also one of the important indexes to evaluate medical service quality.<sup>2</sup> In recent years, it is a common work for hospitals to do patient satisfaction evaluation and most hospitals use the self-made questionnaires. However, there is no unified index and standard, which cause the low credibility and comparability. This becomes obstacles for hospital managers to realize the existing problems and improve the services.

## **1.2 The significance of the research**



### 1. 2.1 To improve the patient satisfaction

In the survey of patient satisfaction, the items is directly evaluated according to the patients their own experience. If patients are unsatisfied with hospital course which will be directly reflected in the satisfaction survey, hospital as the service provider can make timely adjustments and rapid remedies to make hospital service more perfect and the whole process more humane. Thus, hospitals strive to satisfied patients and reduce the disputes between staffs in hospital and patients.

### 1.2.2 To formulate appropriate management strategies

Chinese hospitals occupied the dominant position in the relationship with patients for the long term. With the continuous development of economy, the service market from seller' to buyer', patients is changing from the subordinate position to dominant position in the relationship with hospitals. So hospitals must shift operation strategies quickly. Satisfaction survey activities can promote hospitals to firmly establish the "patient-centered" business strategies, which will be continuous develop during pursuing the process of patient satisfaction.

### 1.2.3 To improve the service consciousness of hospitals staff

Through the satisfaction survey, hospital staffs can understand the demand and expectation of patients for medical services and clearly know which aspects they need to improve and strengthen their consciousness of service quality. At the same time, employees will feel dissatisfaction and complaints from patients to hospital services. This helps them enhance the sense of responsibility.

### 1.2.4 To continuously improve the quality of service

The patients' needs and expectations are not constant. It is a dynamic and relative concept for patient satisfaction. As the time change, the requirement for the same kind of service of patient will still change. Even at the same period, the different hospitals provide the different services that also affect the patient whose change of demand for

same service. The hospital can timely know the reasons of patients' dissatisfaction and satisfactions and analyze the potential demands of patients by satisfaction survey. Then manger can make the appropriate solutions according those reasons, and it helps the quality of service to continuous improvement and innovation.

#### 1.2.5 To strengthen the hospital competitiveness

Today's medical technology has homogeneity. The core competitiveness to support the development of hospital has gradually shifted from pure medical technology to the integration of technology and service and they take patients as the center. It becomes main competitive strategy of many hospitals to serve the satisfactory service for patients. The more comprehensive to understand the customer's need, the more you own the customers, the more you can get a larger share in the market.

### **1.3 Research Purposes**

1.3.1 Discussing nowadays the reasons of tertiary hospital making patients unsatisfied in China

1.3.2 Discussing how to ease the Chinese extreme tense relationship of hospital-patient now

1.3.3 Hope this thesis can inspire hospital managers during the bottleneck of healthcare reformation

### **1.4 Research methods:**

1.4.1 The literature research method: consulting a large number of domestic and foreign satisfaction articles, SERVQUAL scales and healthcare service satisfaction theory and other related literature.

1.4.2 Questionnaire survey: we use a standardized questionnaire to survey. The main investigation is the Department of orthopedics patients in a tertiary hospital in Shanghai.

1.4.3 Statistical analysis method: the questionnaire uses Microsoft Office Excel 2003 to input data, and uses SPSS 24 to process all data. According to the quality of the

data, we do the reliability and validity test, difference calculation and other statistical methods to analyze the data.

## **2. Literature Review**

### **2.1 The development of Customer Satisfaction**

The study of customer satisfaction (CS) began in the 1930s that the experiment of Hopper<sup>3</sup> and Lewin<sup>4</sup> conducted in the field of social psychology and behavior science. With the rapid development of market economy, in the mid-60s, academia carried on the deeply research about customer satisfaction and customer demand. And American scholar Cardozo<sup>5</sup> as the first person introduced the concept of customer satisfaction into the business. It means customer satisfaction research out of the ivory tower and entered into the stage of practical research. Cardozo thinks customer satisfaction can drive the customers to buy again and good reputation. Then Howard and Sheth (1969) reckon that CS is the state of mind of a buyer to judge what you did to the pay and the get is reasonable.<sup>6</sup> Hunt(1977) defined consumer satisfaction is based on the consumers' evaluation from consumption experience. Churchill and Surprenant (1982) defined that customer satisfaction is the result to compare the cost and the various aspects of products. Westbrook and Oliver(1991) put forward the customer satisfaction is a process to evaluate subsequently the opinion of choice which is related to specific purchase. After several years, Oliver(1997) offered customer satisfaction is the preference for product or service during consumption.<sup>78</sup> There are lots of definitions of customer satisfaction. At present, academia generally agree with the concept of customer satisfaction is put forward by Oliver: customer satisfaction is the response when needs of customers are satisfied, meantime it is also the cognitive from customer to the product and service features or degree of satisfied their needs.<sup>910</sup>

The study of customer satisfaction from social psychology of research and application to the field of marketing between 1970s and 1990s, in those days, mainstream scholars believe that CS is influence by efforts you paid and expectations, therefore it

formed psychological theories as represented by contrast theory and dissonance theory.<sup>11</sup> In general, When consumers make more efforts to get a product, no matter whether the value of the product confirms to their expectation or not, they maybe will be disappointed to some extent more or less. And according to the dissonance theory, consumers will improve the product evaluation because of their efforts, because they do not like to be disappointed. Due to the needs of the market, scholars research the satisfaction theory models, and the organizations combine the actual situation of themselves with the satisfaction model to make strategies which compete for customers.

## **2.2 Service Quality**

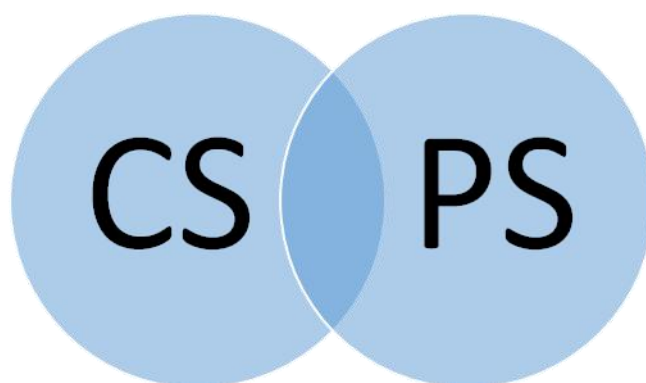
Service quality is a pivotal factor that affects the customer satisfaction which also brings competitive advantages such as improved customer retention, positive word-of-mouth, reduced level of staff migration, decreased costs in attracting new consumers, increased profitability and financial performance, increased customer satisfaction and enlarged market shares (Cronin et al,2000; Janda et al,2002; Gounaris et al,2003; Yoon and Suh 2004). Hence, there has been a continued research on the definition, modeling, measurement, data analysis etc issues of service quality. But there are a number of definitions of service quality. One of them is commonly used defines service quality by Parasuraman that the differences between customer expectations and perceptions of service. If expectations are higher than performance, then perceived quality is less than satisfactory and then customer dissatisfaction occurs. (Parasuraman et al., 1985; Lewis and Mitchel, 1990) .

## **2.3 Patient Satisfaction**

Later the patient is regarded as the customer of medical service, so this concept is introduced into the medical field. And in the early 90s, academic reports have started to call the patients to the consumers directly.<sup>12</sup>Dr. Ranajit Chakraborty and Anirban Majumdar (2011) thinks patient satisfaction is a subset of consumer satisfaction.<sup>8</sup>

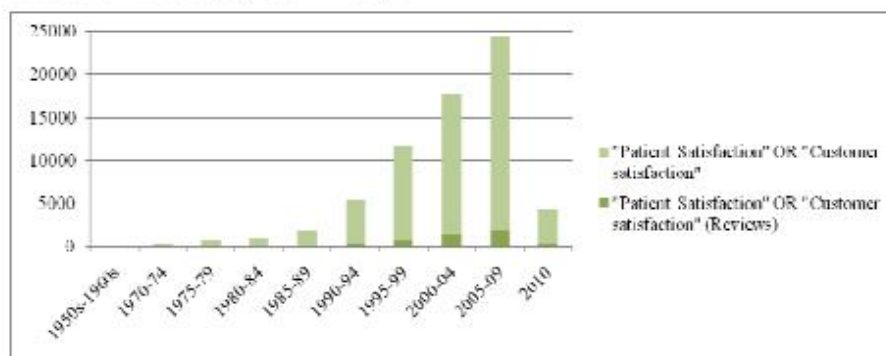
However we can't simply to take patient satisfaction as a subset of the customer

satisfaction. They have the similar parts, for example: they all sell the products and services to clients both of industries. At the same time, the patient satisfaction has its own particularity distinguished from customer satisfaction. First of all, the information asymmetry between medical staffs and patients, patients lack ability to properly the gauge clinical service quality technical aspects to the as surgeon's skills, or general practitioner's diagnostic ability (Bakar et al, 2008);Secondly, the both status is unequal, doctor occupied the positive position. So It points out that the relationship between customer satisfaction (CS) patient satisfaction (PS) should be like this:



Since 1990s the healthcare industry pays more and more attention to the patient satisfaction. We can see from Figure 1<sup>13</sup> that people have a wildly increased trend to search “patient satisfaction” or “customer satisfaction” on PudMed.

Figure 1 - Results of a PubMed search for “Patient satisfaction” or “Customer satisfaction” concepts (1950 – 2010).



Although patient satisfaction as a term is used widely, people still is not clear about its concept. Linder-Pelz(1982) thinks patient satisfaction is an attitude which mainly

concerns the emotional state and is influenced by the information given to patients and the evaluation of the services they receive.<sup>14</sup>

Some scholars believe that patient satisfaction is the most important indicator and prerequisite for the healthcare service quality (Cronin, Brady and Hult, 2000; Cronin and Taylor, 1994). And patient satisfaction means hospital has their criteria to service and meet patient's needs, then high quality of healthcare is the inevitable result (Ramachandran and Cram 2005). According to the Center for the Study Society Policy (2007), satisfaction is a personal assessment of customers which is affected by both the expectation and experience of customers. In 2004 Lee thinks satisfaction is a ratio of perception and expectation.<sup>15</sup> In the same way, PS is equal patient perception divided by patient expectation. Patient expectation is that patient expects what kind of effects and service they want to receive according to their cultural background, lifestyle, personality, demographic, word of mouth and experience with other hospitals. Patient expectation is the overall feeling in the process of interacting with the factors in the hospital, such as communication with staffs, medical service, and environment etc.<sup>16</sup> Until now, the definition of comparative recognition of patient satisfaction is that Risser's patient satisfaction as the degree of convergence between the expectations the patients have of ideal care and their perception of the care they really get (Risser,1975).<sup>17</sup>

It started relatively late to research of patient satisfaction in China, up to now we are still in the exploration phase both in theory and practice aspects. The ministry of health issued "General Hospital Accreditation Standards" in September 1997 which definitely require hospitals to conduct satisfaction survey and during the hospital evaluation standard, the satisfaction is not less than 85%.<sup>18</sup> But so far we have not interpreted the definition of patient satisfaction, people usually use common sense to understand patient satisfaction. Nowadays satisfaction survey has become the important part of hospital service quality in China.

## **2.4 Healthcare Services**

Healthcare Service is a special service industry. It not only has the common

characteristics of service industry, but also its own particularity. So it is necessary to review the research of healthcare service when we talk about the healthcare patients satisfaction.

#### **2.4.1 The concept of service**

Human service activities are associated with human production activities, but management scholars are beginning to study for the connotation of service at the middle of 20<sup>th</sup> century in the United States. In 1960 American marketing association defines that services are "activities, benefits or satisfactions which are offered for sale, or are provided in connection with the sale of goods."<sup>19</sup> Stanton (1974, 545, in Gronroos 1990, 26 ) defines services as intangible activities which provide satisfaction when marketed to consumers which are not tied to the sale of a product or another service. And in 1990 Gronroos<sup>20</sup> thinks "A service is an activity or series of activities of more or less intangible nature that normally, but not necessarily, takes place in interactions between the customer and service employees and/or physical resources or goods and/or systems of the service provider, which are provided as solutions to customer problems". Edvardsson and Olsson (1996) refer to the service concept as the prototype for service and define it as the "detailed description of what is to be done for the customer (what needs and wishes are to be satisfied) and how this is to be achieved"<sup>21</sup> In 2000 ISO 9000 standards series defines "A service is the result of necessarily carry out at least one activity at the interface between the supplier and the customer and is generally intangible".<sup>22</sup> The provision of a service may involve:

- an activity performed on a tangible product supplied by the client (for example, a car repair);
- an activity carried out on an intangible product supplied by the client (for example, the statement of income needed to prepare the tax return to the);
- delivery of an intangible product (e.g. the delivery of information in the context of knowledge transmission);
- the creation of an environment for the customer (for example, in hotels and

restaurant)

From the above ideas we can see that academia has some disagreements for definitions of service, it also has a certain consistency. The above concepts, the suppliers mean the organizations provide the service, the customers are the receivers of products or services, the service condition is contact between the supplier and the customer, the activities of the contact between suppliers and customers and the internal activities of suppliers are the service contents. To meet the needs of customers is the service purpose.

#### **2.4.2 The characteristics of the service**

In order to distinguish service from tangible products, since the late of 1970s many scholars have made a positive exploration to the basic characteristics of the service, and now the four characteristics of the service<sup>23 24 25</sup> has been widely recognized:

- Intangibility: compared with tangible products, service is intangible and abstract to a large extent.
- Heterogeneity: services don't have a fixed quality standard like tangible products, it has a big difference.
- Inseparability: the process of service and consumption is at the same time, the service process is also the consumption process, both of them can't separate.
- Perish Ability: due to the intangibility and inseparability of service which make the service could not be stored as tangible products for future sales.

In 1999 Chinese scholar Zongyu Ji proposed another important characteristic of service —Customer participation: first of all, customers provide their demands information for enterprises; secondly, customers participate in the service process and they will play a role in the process of service. Without the participation of customer, the service can not be implemented. <sup>26</sup>

#### **2.4.3 The meaning of healthcare service**

There are some definitions about service quality in abroad, but there is no clear explanation for healthcare service. In china about the definition of healthcare service



we have different explanations. On the national treasury, tax administration issued ‘ The notice about tax policy of medical and health institutions ’. It points that healthcare service refers to medical service organization for patients to do services in inspection, diagnosis, treatment, rehabilitation and preventive care, birth, family planning fields, and related to provide medicines, medical materials, medical instruments, ambulances, ward accommodation and catering business. <sup>27</sup>

In 2003 Weixin Tang et al, describe the healthcare is the treatment of diseases, especially the professional activity for medical staffs to use medical science and technology to diagnose and cure the diseases. The healthcare service is a combination of healthcare and service, including the procedures of healthcare activities associated with disease prevention 、 diagnosis 、 treatment and rehabilitation etc. A series of behaviors of hospital and their staffs meet the demands of the patients in physical and non-physical form.<sup>28</sup> According to the definition above, we can think the healthcare service is that the medical organization (hospitals are a typical representative) regards patients and a certain social group as the main service object, and it takes the medical technologies as the basic means of service to provide the healthcare needs which can meet demands of people to society and it brings the benefits and non-material service. Healthcare services include:

(1) medical output: mainly include medical service entities and their qualities, it can meet people’s demands for use value of medical service, such as cure the diseases.

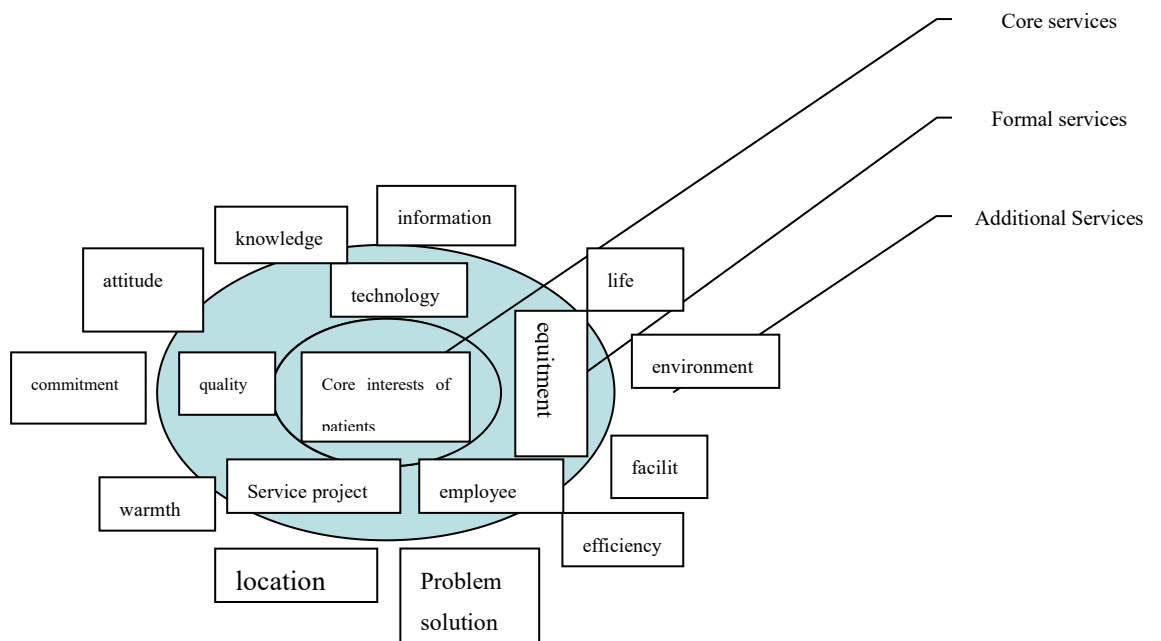
(2) The nonphysical form of service: mainly include service attitude 、 commitment 、 hospital image and public reputation, etc. It can bring additional benefits for patients and meet them psychological satisfaction and trust. And it also can meet the needs of people’s mentality and psychology.

Thus we can make a conclusion that the healthcare service consists of three basic levels, namely:

Core services: this is the most basic level of healthcare service. For example, patients come to hospital in order to diagnose the illness and seek the treatment , and get the high quality solution to relieve pain and back to health as soon as possible. This is the essence of healthcare services.

Formal services: The form of healthcare services. Such as healthcare service project、 level of technology、 the old and new equipment、 the quality and effect of treatment. Formal services show the external quality of healthcare service and it can meet the different needs of same kind of patients.

Additional services: this is the ancillary service to increase the service value. Mainly for extensive part of healthcare services, such as introduction of healthcare knowledge、 medical consultation、 healthcare environment、 living comfort, etc. It can bring more benefits and satisfactions for patients.



The composition of healthcare service 23

#### 2.4.4 The characteristics of healthcare services

Healthcare service is a relatively special service areas in service industry. It has five characteristics of general services, also has their own different characteristics compared with other services. Chinese healthcare service should not only meet the low-income people’s needs, but also has competition and profitability. We want to improve all level of patients satisfactions in healthcare service, so we must understand the characteristics of healthcare services.

Characteristics	The performances in healthcare services
Ethical and Charitable	<ul style="list-style-type: none"> <li>● It decides that healthcare services firstly emphasize the social benefits. Healthcare services serve the society and it must insist on the social benefits as the first place meantime pay attention to economic benefits.</li> <li>● Healthcare ethical requires medical staffs have humanitarian spirit. And it requests medical institutions couldn't have hierarchy to patients.</li> </ul>
Randomness and Regularity	<ul style="list-style-type: none"> <li>● Disease are varied and change fast, but medical technology is limited. So the healthcare services have great randomness and uncertainty of the results.</li> <li>● Medical behaviors is related to people's life which is sure to strictly regulate and enforce operation requirements.</li> </ul>
Chronergy and Continuity	<ul style="list-style-type: none"> <li>● For healthcare services, time is life. When you rescue the patients, every minute is crucial. During this process, healthcare services organization must be 24 hours service.</li> <li>● The process of accepting patients to observe and treat of healthcare services organization, the medical technology and patients both require this process is continuous.</li> </ul>
Extensive	Everyone is likely to be sick, so the healthcare services have the biggest potential customers.
The difficulty to measure the output	Due to the service organization's charitable, we can not use the same standard (such as maximum profits) to evaluate the performance of healthcare service organizations.
The particularity of the doctor-patient	Because medical staffs and patients have the asymmetrical information and knowledge, it leads to the patients in the

relationship	passive position and medical staffs have an absolute advantage in the psychological aspect.
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The characteristics of healthcare services demand a well motivated and hierarchy needs for the employees. In 1943 the American psychologist Maslow proposed hierarchy of needs theory and this theory was fully expressed in his 1954 book “Motivation and Personality”<sup>29</sup>. The hierarchy remains a very popular framework in sociology research, management training <sup>30</sup>and secondary and higher psychology instruction<sup>31</sup>. Maslow thinks the need of people has layers, according to the important degree and order of occurrence, it develop from low level to high lever in a trapezoidal shape. People’s needs including physiological needs, safety needs, social belongs, esteem needs and self-actualization needs. Needs is always from low to high and gradually rising, when the low needs have been met, then higher needs are required to be satisfied. Because everyone has different development situation, so there is not same for people’s motive structure formed by five needs with individual advantage motivation. This is not to say that when the need goes to high level, low level of need will disappear; on the contrary, the low need still continue to exist, sometimes it is even more stronger. And Maslow pointed out if you want to understand your customers, you have to know their basic needs.

Psychological needs is the most basic living conditions of humans, we need air, food, water to survive. Safety needs of patients refer to medical operation safety, hospital equipment safety, etc. Patients hope to receive the care and understanding from family, friends and healthcare staffs that is the society belongs. For the patients, esteem need is mutual respect between healthcare staffs and patients and staffs protect the privacy of patients. During the medical procedures, they will pay attention to keep out the body parts. At the same time, patients need to understand the medical staffs and hospital environment, they also require to know their disease and so on. Patients will have requirements to the layout of hospital and the language and behaviors of medical personnel, the influence for disease treatment on appearance. Self-actualization needs

are the willingness of patients to join into some work or other aspects.

## **2.5 SERVQUAL and The theory of service quality gap**

In the early 1980s, the whole world unfolds a vigorous mass campaign for service quality. The pioneers of this field is A.Parasuramn, Valarie A.Zeithaml and Lenoard L.Berry those three academics co-authored a landmark article “ A Conceptual Model of Service Quality and Its Implication for Future Research” which was published in Journal of Marketing in 1985. According to the quality gap theory<sup>32</sup>, they proposed the Service Quality Gap Model (see flow chart at bottom)<sup>33</sup> Figure 1, until now this conceptual model has still been considered to be one of the most important achievements of the marketing field.

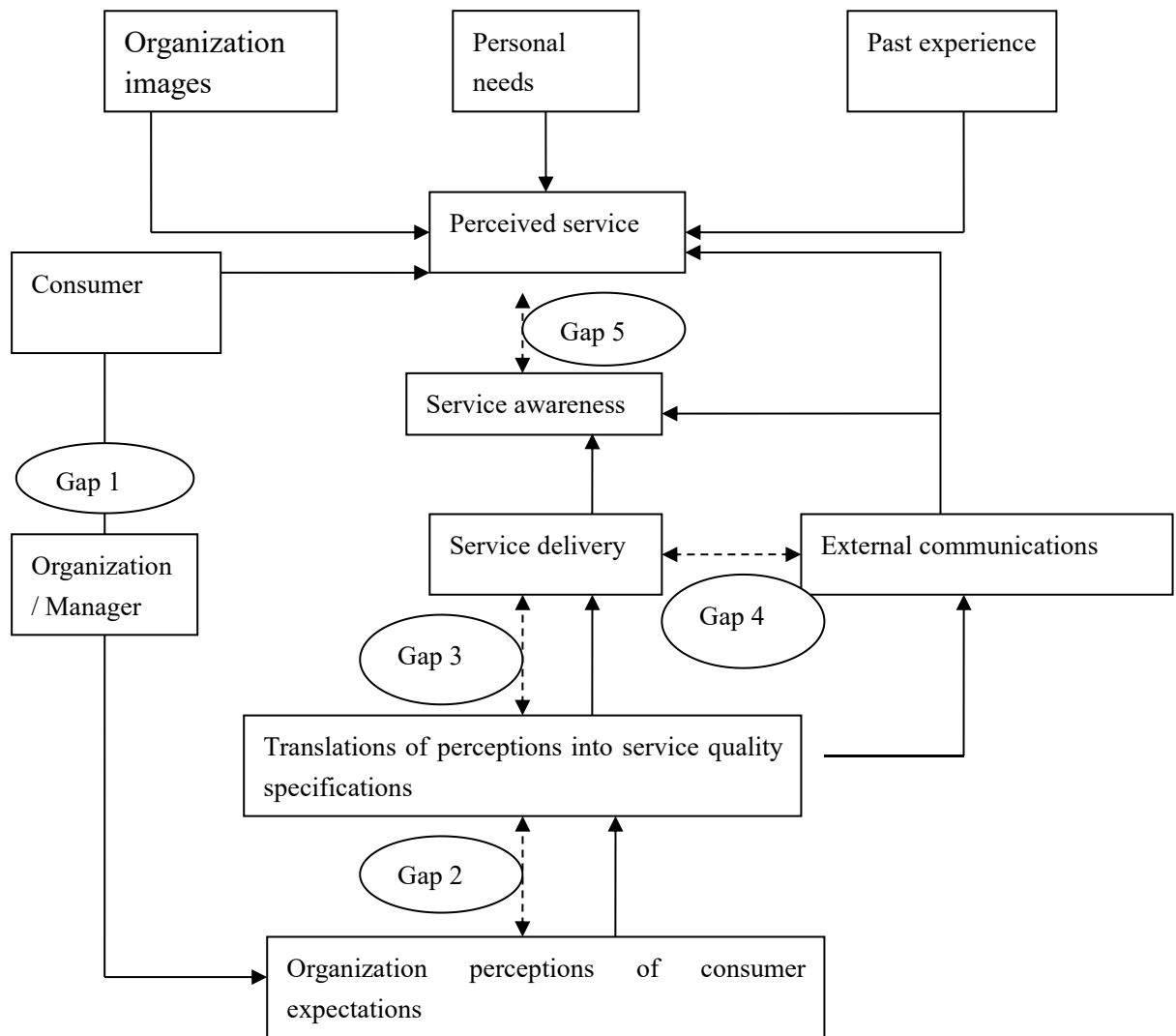


Figure 1

Gap 1 is cognitive gap. This is gap between the customer's expectation and the understanding for these expectations of organization's managers. The cause of the gap is that managers can not understand customer's expectations fully. Customer expectation is affected by the internal and external environment: the external environment such as organization propaganda ( advertisement、 public relations, etc) and word-of-mouth of organization; the internal environment is the past service experience the customer received and personal needs, etc.

Gap 2 is the gap of setting standards which between manager's understanding of customer expectations and the service quality standards set. This may be due to that although managers understand the customer's expectation, they lack of awareness to

meet the customer expectations or can not meet customer expectations. These caused the gap two.

Gap 3 is the service performance, it points the gap between the service quality standards and actual services provided by the employees. When the organization's employees can not understand the service quality made by organization very well or lack of sense of responsibility, or the defect in terms of skills, all of them is likely to lead to this gap.

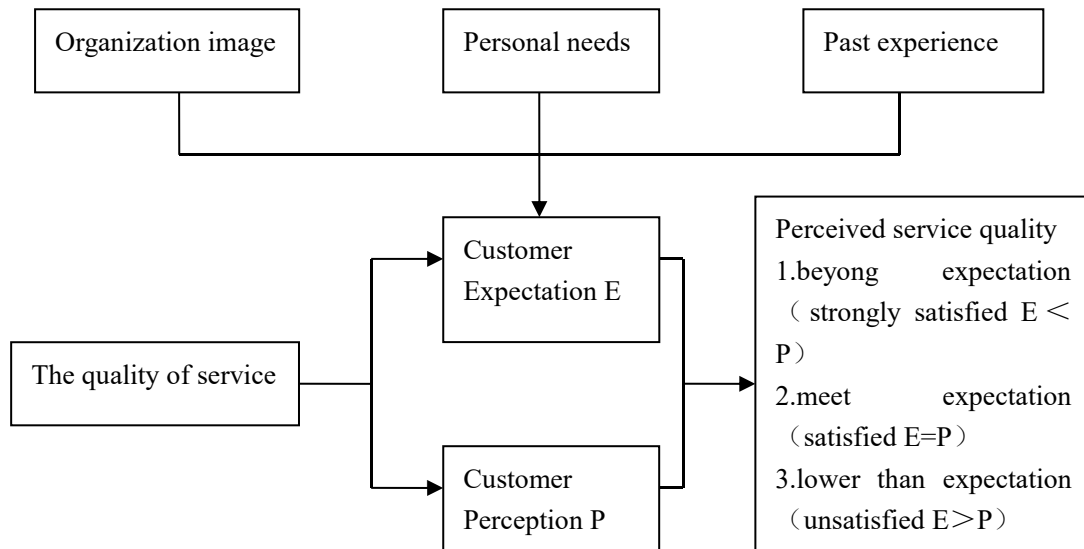
Gap 4 is service delivery which refers to difference between actual services provided and actual service experience felt by customers. This may be due to the organization exaggerate the commitments in the market but their services do not reach; Or the service commitments are proper but staffs' understanding is not accurate enough which make the service does not match into the promise.

Gap 5 is the quality gap. This is from customer expectations to actual perceptions of the service. Gap 5 is influenced by in front of gaps and it is the result of accumulation of the front four gaps. So if we reduce and eliminate the front four gaps, it will help shrink the service quality gap.<sup>34</sup>

Parasuramn, Zeithaml and Lenoard think that perceived service quality is the result through the comparison from provider offering services to customers or consumers' expectations to services. " only the customers or the user can evaluate the quality, all of other evaluations are not relevant." Therefore, we must evaluate the healthcare quality from the perspective of medical service object. So the hospital patients have an absolute right to speak on healthcare service quality. Healthcare service quality of customer perception depends on their expectations to healthcare institutions and the direct contact with healthcare organizations.

Before going to medical institutions, every customer has their own requirements and has a certain expectations for hospital. This expectation is affected by past experiences, social public opinions, hospital images and word-of-mouth from family and friends. After receiving the healthcare service, they have the real feeling for service quality. The gap between customer perception and customer expectation decide the level of service quality and the degree of customer satisfaction for

healthcare institutions. If perception is lower than expectation, it shows that customers think the service quality is poor, they will not be satisfied with this service; If perception is match the expectation that service is accepted by customers and they are satisfied; If perception is higher than expectation, the customers think the level of acceptable service quality is high with strong satisfaction to service organization.



The formation of quality gap (Gap 5)

This theory shows the service content in the form of data which is more easier to measure and control the service quality, meantime it can also compare the hospital service with their competitors and distinguish it from other hospitals. Parasuramn, Zeithaml and Lenoard carried on the deep research to gap 5. Because the service quality is happening in the process of providing the service that is implementation of contact in organization and customer. So the evaluation of service quality is converted to calculate the gap between expected service and perceived service which present the exact date to stand for the service. Therefore, they put forward a famous equation:

$$Q = P - E$$

P on behalf of the customers' evaluation for service they got, it means service perception;

E stands for the service expectation before receiving services of customers;



Q means the evaluation to service provider or the process of service.

## **2.6 Evaluation Method of SERVQUAL**

At present, we evaluate the service quality based on the patient satisfaction in China and we have a variety of forms to investigate, such as regular and irregular satisfaction survey, etc. Although in recent years satisfaction survey has been already used widely in many hospitals, there are still some deficiencies: patient satisfaction survey is about the ultimate feeling of patients for service quality, but it can not reflect the expectation of patients to healthcare service. And actually patients' expectation has an important influence on evaluating satisfaction and service quality: if the service provider give a high promise, so the patients' expectation will increase, even though the service provider offers the same quality level, patients perceive that the service quality will also decline and it leads to satisfaction goes down. Moreover, satisfaction survey is to judge the service quality by patients themselves. They don't have objective evaluation scale. The results will be more emotional and can not make scientific analysis.

Therefore, we need to establish a scientific and objective healthcare quality model which can reflect the actual patients' feeling and expectation. It can evaluate and predict the medical service demands of patients. And it examines the existing healthcare service quality. The SERVQUAL meets these requirements.

In 1980s research about service quality becomes more and more and this era witnessed the evolution of different theoretical perspectives on it. During this time Parasurman et al made an exploratory research based on four service industry( retailing banking, credit card, securities brokerage, product repair and maintenance).

Parasuramn, Zeithaml and Lenoard summarized the ten dimensions of service quality according the result of research: reliability( service staffs provide the correct and reliable service to customers), responsiveness( service personnel's ability to identify customer intentions quickly), access( customers access easily to services), competence

( service staffs have required knowledge and skills), communication (two-way communication between customer and server), knowing the customer (organization care about the interests of customer and make them trust us), security( let customers from risk 、 danger and uncertainty), courtesy (understand customer needs and put ourselves in customer's place), tangibles( the physical environment). And the contents are expressed in 97 indicators. Based on the repeated sampling survey of selected industries and used mathematical statistics methods to calculate the data. They deleted a lot of meaningless and repeated index after using Cronbach a coefficient and oblique spin factor analysis and reclassified them.

Then in 1988 the SERVQUAL questionnaire was first published by a team of academic researcher, Parasurman, Zeithml and Berry in Journal of Retailing<sup>35</sup>.

Finally they extracted the service quality scale consisted of 22 indictors from five dimensions. The five dimensions are<sup>36</sup>:

Reliability: the ability to perform the promised service dependably and accurately.

Responsiveness: the willingness to help customers and to provide prompt service.

Assurance: the staff's professional knowledge and courtesy and their ability to convey trust and confidence.

Empathy: the provision of caring, individualized attention to customer.

Tangible: the appearance of physical facilities, equipment, personnel and communication materials.

We need to measure twice to every respondent when we make SERVQUAL questionnaire. The first measurement is what is service quality of customers who expect themselves receive before accepting service, it is the service of expectation. The second measurement is the true feeling of customers after accepting the service, namely service of perception<sup>37</sup>. On the survey scale, the SERVQUAL questionnaire used the Likert scale, the 7 point scale method. But according to the research experience of scholar Berdie (1994), in most cases, the 5 point scale method is the most reliable<sup>38</sup>. Considering the basic situation of our country, because many people do not have enough discrimination to the 7 point scale method, this will lead to the loss of the reliability and validity of the questionnaire. Therefore, this study uses 5

point scale method "1" represents "strongly disagree", "2" stands for "somewhat disagree", "3" stands for "neither disagree nor agree", "4" stands for "somewhat agree", and "5" stands for "strongly agree"<sup>39</sup>.

This questionnaire focuses on the China's hospital satisfaction issue. We divided into two parts. The first part is the basic information of the patients, from one to five questions in the questionnaire; the second part we applied the SERVQUAL, but this survey is aimed at Chinese hospital, so we translate the SERVQUAL into Chinese and modifies a few questions then send it to Chinese patients and investigate them. (See Appendix )

### **3. Result**

#### **3.1 The analysis of results**

SERVQUAL scale is effective to evaluate service quality satisfaction which is validated though a large number of experimental. We will conduct this questionnaire in China and we have to translate the original questionnaires into Chinese. So we need to do the reliability and validity examination.

##### **3.1.1 Reliability Test**

The Reliability Analysis procedure calculates a number of commonly used measures of scale reliability and also provides information about the relationships between individual items in the scale<sup>40</sup>. The patient satisfaction assessment questionnaire of healthcare service reflects the degree of reliability of patients' evaluation. Cronbach's alpha coefficient ( $\alpha$ ) is common method to test reliability in Likert scale which between 0 and 1. If coefficient  $\alpha$  is equal or less than 0.6 so that the internal consistency reliability of questionnaires is not enough; If  $\alpha$  in the 0.7-0.8, the questionnaire has the relatively good reliability; If  $\alpha$  is above 0.9, the reliability of scale is very good. After examination, the result shows the  $\alpha$  coefficient of total scale is above 0.9, other dimension of  $\alpha$  coefficient is all higher than 0.8, the internal consistency is high. On the whole, the questionnaire consisted of five dimensions is

highly credible to evaluate satisfaction.

As the chart shows:

The table of reliability coefficient  
in patients satisfaction questionnaire

Dimensions	Items	Cronbach's a (E)	Cronbach's a (P)
Reliabilities	5	0.866	0.851
Responsiveness	3	0.897	0.836
Assurance	3	0.901	0.807
Empathy	4	0.922	0.859
Tangibility	6	0.919	0.864
<b>Total</b>	<b>21</b>	<b>0.970</b>	<b>0.951</b>

### 3.1.2 Validity Test

#### KMO Test

To test the rationality of the questionnaire translation, we need to test the degree of influence on the customer evaluation result of each evaluation index. Validity is the effectiveness of scale that it is the investigation for the measured result to reflect the consistency of the research's contents. The higher the consistency, the higher the validity of the scale, and vice versa. This research uses the KMO and Bartlett sphere test methods to test the validity of scale, the results are as following:

#### Validity Test of Pre-admission

##### KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.931
Bartlett's Test of Sphericity	Approx. Chi-Square	2115.980
	df	231
	Sig.	.000

#### Validity Test of Discharge

### KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.922
Bartlett's Test of Sphericity	Approx. Chi-Square	1557.243
	df	210
	Sig.	.000

KMO coefficient of the test is 0.931 and 0.922 which are greater than 0.5, P (the statistic value of Barlett test's significant probability value) is  $0.000 < 0.05$ , it means the structure validity of the scale is good.

### Factor Analysis Method

The closer the KMO value to 1, the better the correlation between the questions, and the more suitable for factor analysis. Factor analysis is to study the internal dependence of the correlation for matrix, making the sum of variables into a few factors, which shows the correlation between the original variables and the factors<sup>41</sup>. Since the SERVQUAL questionnaire has been divided into five dimensions, we use factor analysis to test whether the scale classification is valid and whether the subjects measure the same factor.

Before admission of questionnaire, we can extract two main factors through SPSS analysis, as shown in Table 3.1, question 14, 16, 18, 19, 20, 21, 22, 23, 24, 25, 26 for the first dimension, we can see that these are the basic requirements for service industry; question 6, 7, 8, 9, 10, 11, 12, 13, 15 and 17 for the second dimension, because the hospital is different from the general service industry, so before admission patients value professional skills of hospital which whether it is trustworthy or not. Through the analysis of the questions, we can sum up the expectation of the patient before admission into the basic services and the professional services of the hospital.

After admission SPSS analyze three main factors can be extracted. Through the analysis we named the first factor individualized consideration relating to the question 7, 8, 9, 11, 12, 13, 16, 17, 18, 19, 20, 26; the second factor of question are 21, 22, 23,

24, 25 that become the facility this new dimension; These questions 6,10, 14, 15 constitute a new dimension of trust

**Rotated Component Matrix<sup>a</sup>**

	Component	
	1	2
Q24_R4	.863	.230
Q23_R4	.861	.196
Q25_R4	.801	.361
Q26_R4	.744	.216
Q22_R4	.724	.460
Q19_R4	.715	.494
Q21_R4	.704	.265
Q16_R4	.678	.540
Q20_R4	.645	.440
Q18_R4	.621	.609
Q14_R4	.612	.548
Q8_R4	.220	.795
Q7_R4	.061	.758
Q9_R4	.450	.757
Q11_R4	.465	.715
Q10_R4	.457	.697
Q12_R4	.515	.687
Q17_R4	.582	.664
Q13_R4	.584	.659
Q6_R4	.249	.638
Q15_R4	.593	.600

Extraction Method: Principal

Component Analysis.

Rotation Method: Varimax with

Kaiser Normalization.<sup>a</sup>

a. Rotation converged in 3 iterations.

Table 3.1

**Rotated Component Matrix<sup>a</sup>**

	Component		
	1	2	3
Q18_R5	.901	.168	.101

Q11_R5	.806	.191	.130
Q12_R5	.801	.219	.142
Q17_R5	.785	.274	.253
Q19_R5	.754	.304	.131
Q7_R5	.668	-.026	.528
Q13_R5	.626	.365	.369
Q8_R5	.583	.084	.544
Q16_R5	.582	.392	.359
Q26_R5	.526	.386	.270
Q20_R5	.476	.297	.302
Q9_R5	.452	.375	.431
Q25_R5	.155	.786	.187
Q21_R5	.194	.748	.093
Q22_R5	.283	.738	.337
Q23_R5	.197	.691	.318
Q24_R5	.461	.655	.009
Q14_R5	-.021	.522	.726
Q15_R5	.318	.415	.686
Q6_R5	.483	.101	.610
Q10_R5	.200	.585	.606

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser

Normalization.<sup>a</sup>

a. Rotation converged in 10 iterations.

Table 3.2

Before the admission, the main expectation of patients to the hospital is that hospital has professional medical technology and service. However, after taking the treatment, their demands has been changed which leading to the same questions have different main factors in before and after admission. After the admission experience, the patients pay more attention to obtain individual's attention during the service provided at the same time. And patients has put forward the further request to the hospital. The patient does not need the hospital to provide the popularized service, and they hope the medical staff give the different nursing measures and the treatments basing on t the different disease and the different situation.

## 3.2 The demographic characteristics of patients

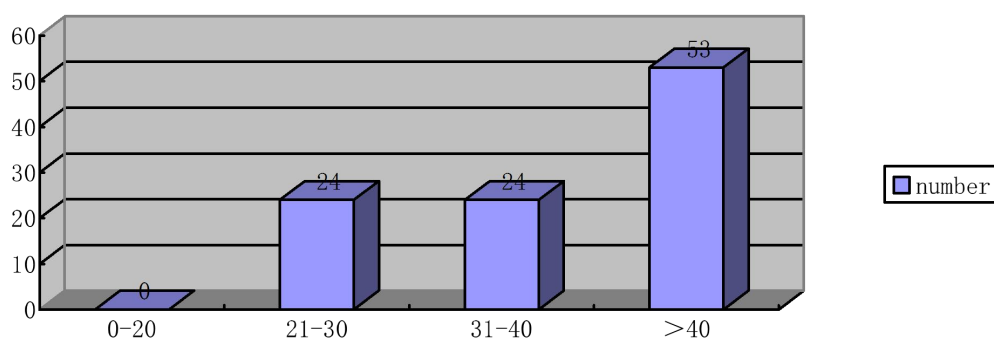
### 3.2.1 Descriptive Statistics

The objects of study are 150 patients in orthopedics department of a tertiary hospital in Shanghai of China from January 20, 2017 to May 20, 2017. We distributed questionnaires to 150 patients, and collected 130 questionnaires which invalid questionnaires are 29. The recovery rate is 86.7% and the effective recovery rate is 67.3%. At the same time as a result of patients of every department pay the different level attention to five aspects of SERVQUAL, so we consulted the 30 patients in orthopedic department through the oral explanation to tell them the total value is 100 points, according to their own opinions, they draw the score to the five aspects in the scale. Because some parts the gap between expectation and perception is big, but patients maybe think this aspect is not important for them. That's why we need to find out which aspects patients emphasize on. And we concluded the average weight for five aspects by patients rating.

### 3.2.2 Age pattern analysis

The following figure reflects the age trend of orthopedic patients. The middle aged and older people occupied the higher proportion, it reached 52.48%, compared with teenagers of 0%. The percentage of 21-30 years old is the same as percentage of 31-40 years old, the ration is 23.76%.

We can seen the teenagers are basically not service objects in orthopedic. And how to service for elderly patients are orthopedic emphasis in the future.





We compared the service satisfaction assessment in different ages. The following data show that the different age has the different feeling for hospital service.

	weight	0-30			31-40			>40			
		Q 6-10	AVE	P-E	Result	AVE	P-E	Result	AVE	P-E	Result
Reliability	41.16667	E	3.733333			4.208333			4.403774		
		P	3.4	-0.33333	-13.7222	3.983333	-0.225	-9.2625	3.6	-0.80377	-33.0887
		Q 11-13									
Responsiveness	14.83333	E	3.527778			4.152778			4.352201		
		P	3.236111	-0.29167	-4.32639	3.777778	-0.375	-5.5625	3.201258	-1.15094	-17.0723
		Q 14-16									
Assurance	11.33333	E	3.875			4.208333			4.496855		
		P	3.611111	-0.26389	-2.99074	4.097222	-0.11111	-1.25926	3.861635	-0.63522	-7.19916
		Q 17-20									
Empathy	18.83333	E	3.604167			4.135417			4.415094		
		P	3.3125	-0.29167	-5.49306	3.78125	-0.35417	-6.67015	3.349057	-1.06604	-20.077
		Q 21-26									
Tangibility	13.5	E	3.805556			4.180556			4.41195		
		P	3.611111	-0.19445	-2.62501	4.020833	-0.15972	-2.15626	3.779874	-0.63208	-8.53303

As is shown in the table, because of different degree for attention in five aspects, by considering the average weight, it is concluded that the orthopedic patients are most dissatisfied with the hospital's reliability. The people over the age of 40 who are the main service object in this department are most dissatisfied for reliability, up to -33.0887 followed by empathy and responsiveness, respectively -20.077 and -17.0723. In the age of 0-30 and 31-40, the overall quality of service of hospital is in accordance with their expectations, although they are not likely to elder, their scores are still relatively high in reliability ,empathy and responsiveness. This suggests that the hospital can not solve the problems of patients on time and do not give them enough care and personal attention. Faced such a large amount of case every day for staffs in hospital, how to ensure every patient receive timely treatment and healthcare worker how to take the patients as the center, those issues hospital need to improve.

### 3.2.3 Gender analysis

The proportion of men and women in this survey is 58.41% and 41.58% respectively. The Shanghai overall population of men and women ratio was 49.65% and 50.35%<sup>43</sup>.The basically similar to our inquiry. The gender distribution of investigators in this research is balanced.

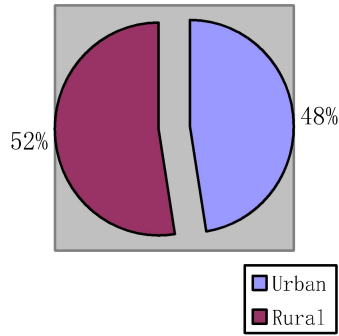
			Female			Male		
	weight	Q 6-10	AVE	P-E	Result	AVE	P-E	Result
Reliability	41.16667	E	4.180952			4.210169		
		P	3.757143	-0.42381	-17.4468	3.562712	-0.64746	-26.6536
		Q 11-13						
Responsiveness	14.83333	E	4.015873			4.175141		
		P	3.52381	-0.49206	-7.29893	3.220339	-0.9548	-14.1629
		Q 14-16						
Assurance	11.33333	E	4.142857			4.378531		
		P	3.888889	-0.25397	-2.8783	3.836158	-0.54237	-6.14689
		Q 17-20						
Empathy	18.83333	E	3.988095			4.275424		
		P	3.595238	-0.39286	-7.39881	3.334746	-0.94068	-17.7161
		Q 21-26						
Tangibility	13.5	E	4.087302			4.30226		
		P	3.753968	-0.33333	-4.50001	3.827684	-0.47458	-6.40678

From the chart we can see clearly that the man has the higher requirement for hospital services. They expect more concern and care from the healthcare staffs. In terms of empathy, the gap of male reached -17.7161, while female is only -7.39881. Men hope staff can really care about their needs and have high expectation, so their tolerance is lower than women.

### 3.2.4 Data analysis between urban and rural

Shanghai is the economic center of China, as well as an international metropolis, with advanced medical technology level and equipments. Many patients from other cities or rural area come here to look for better medical resources, or some difficult and complex operations and conditions only can come here to be solved. As a tertiary hospital, it faces the patients from all over the country. The below pie chart indicates

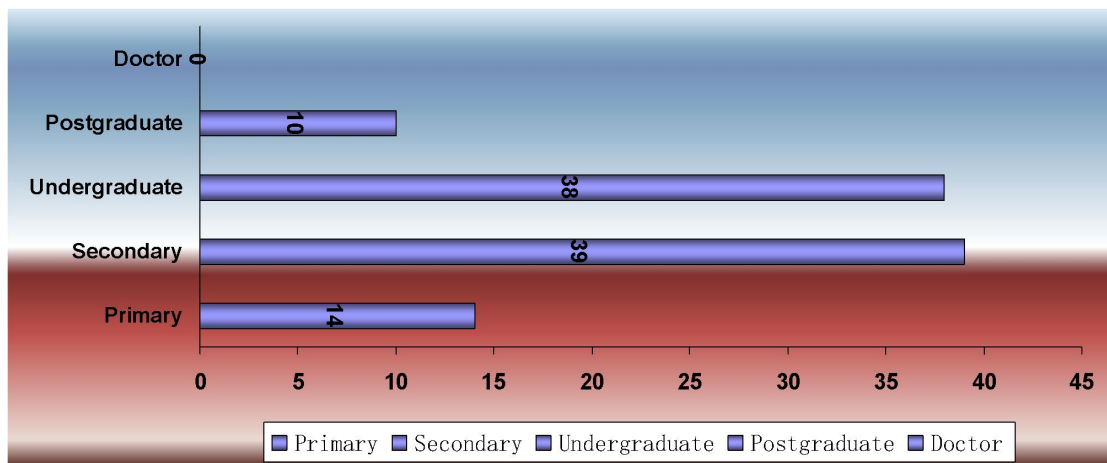
the population in urban and rural is almost equal. About the satisfaction scale result, the data of urban and rural has no big differences. It illustrates regional factor exerts low impact on patients' satisfaction.



	weight	Urban		Rural	
		P-E	Result	P-E	Result
Reliability	41.16667	-0.59167	-24.3571	-0.52075	-21.4375
Responsiveness	14.83333	-0.90972	-13.4942	-0.62893	-9.32913
Assurance	11.33333	-0.52778	-5.98151	-0.32704	-3.70645
Empathy	18.83333	-0.78125	-14.7135	-0.65094	-12.2594
Tangibility	13.5	-0.46528	-6.28128	-0.37107	-5.00945

### 3.2.5 Educational background analysis

The column chart shows there are more secondary degree patients and undergraduate degree patients, the former is 38.61% and the latter is 37.62%. While master degree or higher patients only has 10 people of total number of investigation, accounting for 9.9%. So the main degree of hospital patients are university and secondary education, there is less higher education people.



In China we use university line to divide the high education and basic education. Below the university those people are accepted the China basic compulsory education. We can see from following date that people from different educational background has the different requirements and experiences for hospital service.

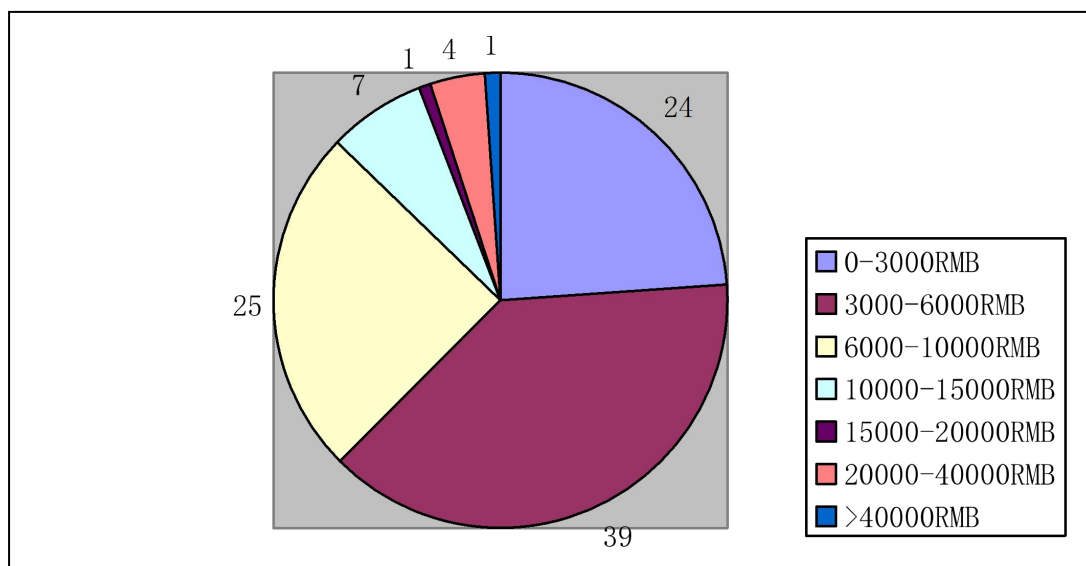
	weight	Below Undergraduate		Above Undergraduate	
		P-E	Result	P-E	Result
Reliability	41.16667	-0.68302	-28.117657	-0.4125	-16.98125
Responsiveness	14.83333	-0.87421	-12.967448	-0.63889	-9.4768683
Assurance	11.33333	-0.52201	-5.9161133	-0.3125	-3.5416667
Empathy	18.83333	-0.91981	-17.323088	-0.48438	-9.12249
Tangibility	13.5	-0.59748	-8.06598	-0.21528	-2.90628

It can be seen from above table, in terms of tangibility, the basic education people is four times as dissatisfied as high education people, the gap is -8.06598 and -2.90628 respectively. And the degree of dissatisfaction of basic education people is twice that of high one, the former is -17.323 and the later is -9.122. In general, the people who accept basic education is more dissatisfied with hospital service than high education people. Compared two group of people, you find that high education people care more about whether hospital can keen insight into their needs and provide the assistance timely or if staffs pay attention to individual requirements and meet them. Whereas basic education people hope the healthcare staffs can care about their feeling and emotions, give them enough attention and company.

### 3.2.6 Income analysis

With the development of China's economy and the promotion of national policy, it is

apparent that the huge gap between the rich and the poor of Chinese residents in big cities. The following figure, we know the people who has 3000RMB monthly income and the more than 40000RMB exist in the same city at the same time. The patients under family monthly income 3000RMB have 24 people, occupied the total number of respondents for 23.76%. The people who have monthly income of 3000-6000RMB are 39 which constitute 38.61%. 24.75% of patients earn 6000-10000RMB per month. And monthly income more than 15000RMB people is a wealthy class occupied the tiny part in hospital, accounting for 4.9%. Through the following pie chart, we can seen the majority of patients are the low and middle class in this tertiary hospital in Shanghai.



Below table is about each income class for hospital service satisfaction. We can see that the main income group of patients are most dissatisfied for hospital service. This hospital mainly face to the middle-income family, this is related with the position and economy of Shanghai. It offers the reference for their clients to reform policy in the

future.

	Income	0-3000RMB(per month)		3000-6000RMB(per month)		6000-15000RMB(per month)		>15000RMB(per month)	
	weight	P-E	Result	P-E	Result	P-E	Result	P-E	Result
Reliability	41.16667	-0.38333	-15.780418	-0.73333	-30.18875167	-0.5125	-21.09791667	-0.3	-12.35
Responsiveness	14.83333	-0.36111	-5.356465	-0.92308	-13.69235333	-0.98958	-14.67877	-0.11111	-1.648132
Assurance	11.33333	-0.22222	-2.5184933	-0.57265	-6.490033333	-0.41667	-4.72226	-0.27778	-3.148173
Empathy	18.83333	-0.57292	-10.789993	-0.85256	-16.05654667	-0.70313	-13.24228167	-0.41667	-7.847285
Tangibility	13.5	-0.31944	-4.31244	-0.50427	-6.807645	-0.45313	-6.117255	-0.02778	-0.37503

### 3.3 The analysis of patient satisfaction evaluation

In order to facilitate statistics, we use the numbers 1,2,3,4,5 to respectively replace strongly disagree, somewhat disagree, neither disagree nor agree, somewhat agree and strongly agree, and eliminating 29 invalid questionnaires. To facilitate the analysis, we use number 1, 2 to stand for dissatisfaction, number 3, 4 representative satisfaction, number 5 on behalf of the service is normal. The method of calculating difference in value to help hospital managers to better identify the dissatisfied aspects of patients, the problems existing in the service, and in which targeted determinate the direction and focus of hospital service management development.

#### (1) The global assessment of healthcare service satisfaction

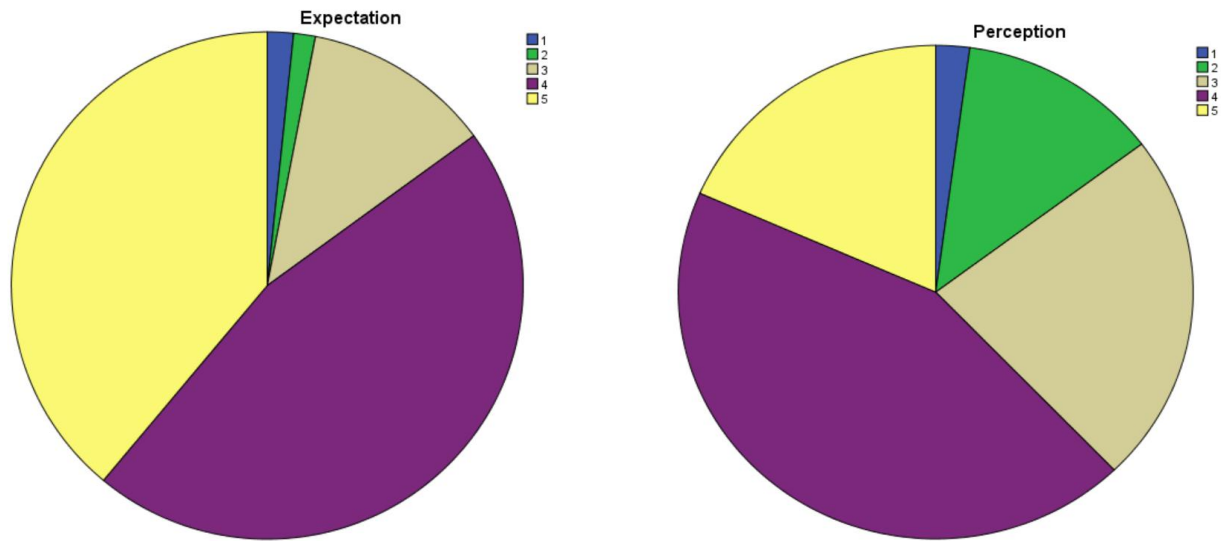
Healthcare service quality satisfaction (Q) = the perceptible healthcare service level of patients (P) - the expectation healthcare service level of patients (E) so the global assessment for healthcare service satisfaction is conducted as following equations:

Formula one: 
$$Q = \frac{1}{N} \sum_{i=1}^n (\bar{P}_i - \bar{E}_i)$$

$\bar{P}_i$  is the average value of the service perception for the question i;  $\bar{E}_i$  is the average value of the service expectation for question i; N is the number of questions in the scale (N=21) .

According to the value of Q's positive and negative, hospital can know their own service quality level and patient satisfaction. If Q is positive, the service level is higher than expectation of patients, patients are very satisfied, the more outstanding the hospital service quality, the higher the value; If Q is negative, it means there is a gap between hospital service and patients' expectation, patients are not satisfied with the service provided by hospital, the greater of negative value, the bigger the gap, the hospital need to improve as soon as possible; If Q is tend to be 0, the hospital service is match with patient expectation basically.

According to the formula one, the total score of the service quality of this orthopedic department in shanghai is -0.56, so we know the gap is not large between the overall hospital services and patient expectation, as the chart below, general speaking, the population of patients dissatisfaction (blue and green block) is obviously more than before admission and the number of satisfaction (yellow block) decrease less half than before admission , the hospital should make efforts to improve the satisfaction of patients.



(2) Evaluation of the every dimensions and indicators

SERVQUAL questionnaire is divided into five dimensions, in which the weight of each dimension is different. So we can get the general satisfaction difference of each dimension. As illustrated in Figure 3.2.1, and we will find out the specific aspects of the patient's dissatisfaction though the specific findings of each dimension.

The calculation formula of number K dimension in service quality satisfaction:

$$\text{Formula two: } Q_k = \frac{1}{M} \sum_{i=1}^m (\bar{P}_i - \bar{E}_i) * W$$

In which  $Q_k$  is the service quality satisfaction of number K dimension for perception of patients;  $\bar{P}_i$  is the is the average value of the service perception for question i;  $\bar{E}_i$  is the average value of the service expectation for question i; M is the number of questions in K dimension; W is the proportion of every dimension.

The formula of number i index in service satisfaction

$$\text{Formula three: } Q_i = \bar{P}_i - \bar{E}_i$$

In which  $Q_i$  is the service quality satisfaction of number i indicator for perception of patients;  $\bar{P}_i$  is the is the average value of the service perception for question i;  $\bar{E}_i$  is the average value of the service expectation for question i.

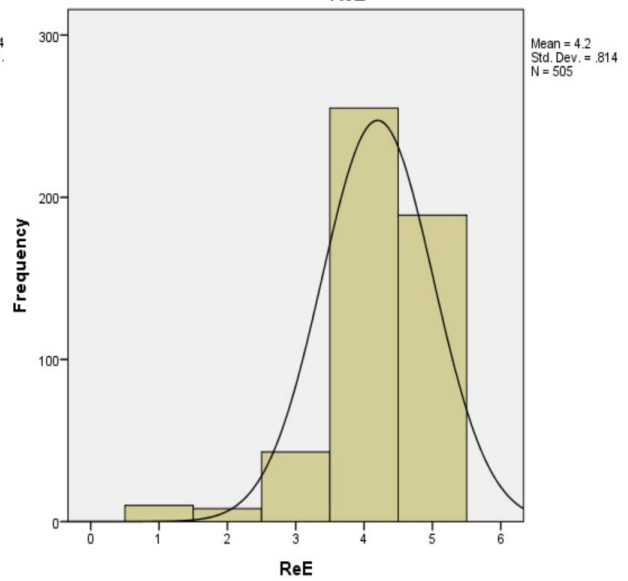
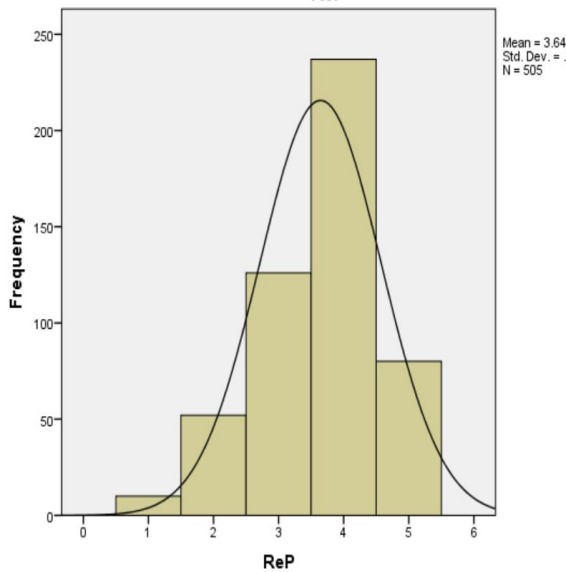


	Question	Scores	NUM	AVE	P-E	weight	Result
Reliabilities	E	2120	505	4.19802			
	P	1840	505	3.643564	-0.554455446	41.1666667	-22.82508251
Responsiveness	Question 11-13						
	E	1245	303	4.108911			
	P	1014	303	3.346535	-0.762376238	14.8333333	-11.30858086
Assurance	Question 14-16						
	E	1297	303	4.280528			
	P	1169	303	3.858086	-0.422442244	11.3333333	-4.787678768
Empathy	Question 17-20						
	E	1679	404	4.155941			
	P	1391	404	3.443069	-0.712871287	18.8333333	-13.42574257
Tangibility	Question 21-26						
	E	2553	606	4.212871			
	P	2301	606	3.79703	-0.415841584	13.5	-5.613861386

Figure 3.2.1

① Reliability and patient satisfaction

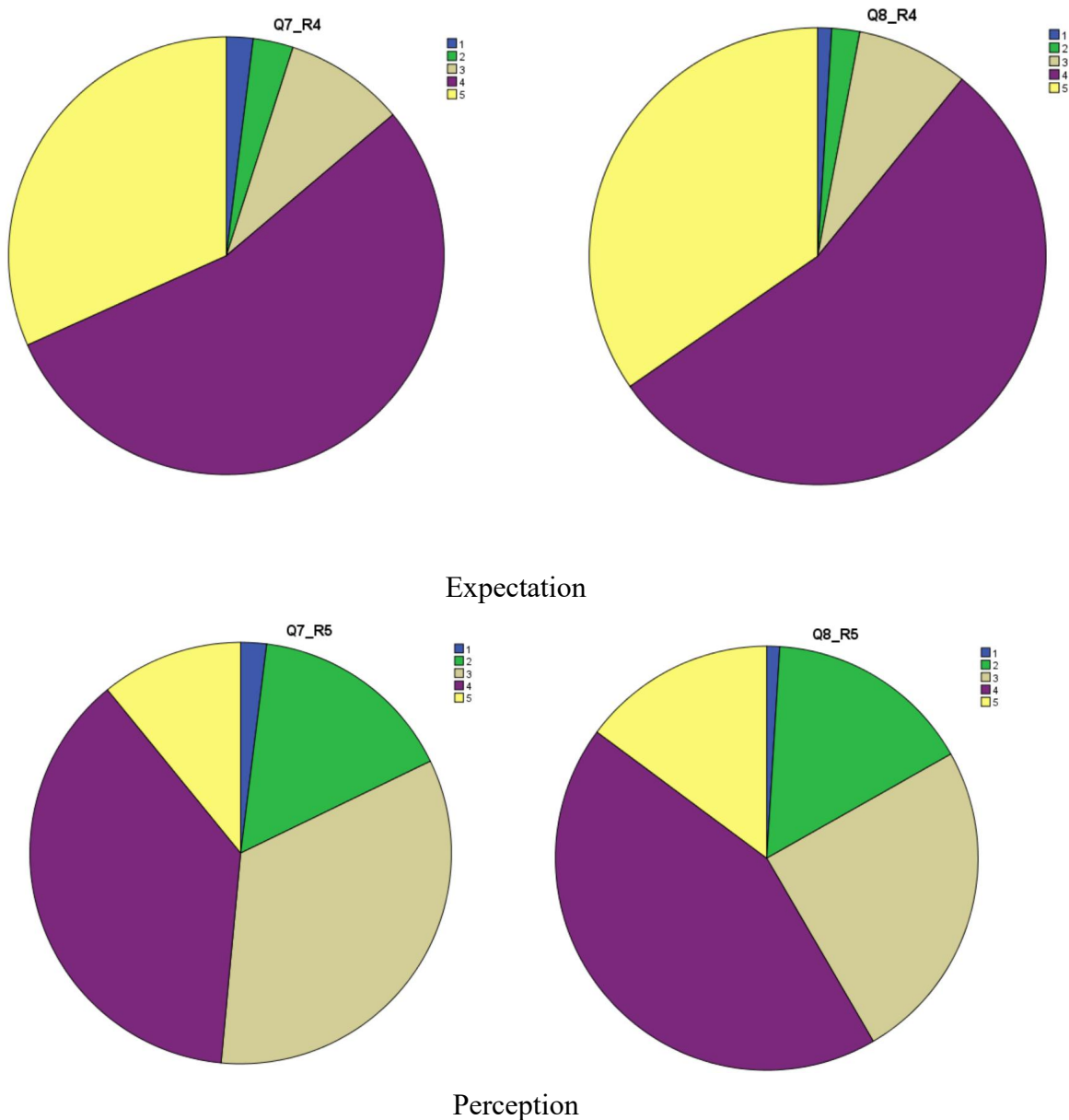
As shown in table 3.2.1, in the dimension of reliability  $Q=-0.55$  and weight accounts for 41.17%. According to formula two, the final result of  $Q$  is  $-22.825$ . It shows that patients in Department of orthopedics are most valued in this respect, but it is also one of the lowest satisfaction aspects. It can be concluded from the following two histograms comparison that the number of dissatisfied people who have perceived (52 people chose number 2 which is not satisfied) is 7 times the increase of people who are pre-admission (8 people); there are 189 patients who think the hospital will be good in keeping their service commitments (number 5), however, after admission only 80 people still feel very satisfied for hospital services. The figure clearly tells us that the gap is big between the patient's perceived value and expected value in this dimension, which is a priority and effort for the hospital to improve its service and satisfaction. At the same time, hospitals must study further the characteristics of patients' expectations and what are the specific aspects to improve the services.



Then, we analyze the five indicators of this dimension according to the formula three:

Reliability	$\bar{P} - \bar{E}$	Q6		Q7		Q8		Q9		Q10	
		P	E	P	E	P	E	P	E	P	E
		-0.42		-0.71		-0.65		-0.48		-0.53	
	Mean	3.76	4.18	3.4	4.11	3.55	4.2	3.73	4.21	3.77	4.3
	Median	4	4	3	4	4	4	4	4	4	4
	Mode	4	4	4	4	4	4	4	4	4	5
	Sum	380	422	343	415	359	424	377	425	381	434

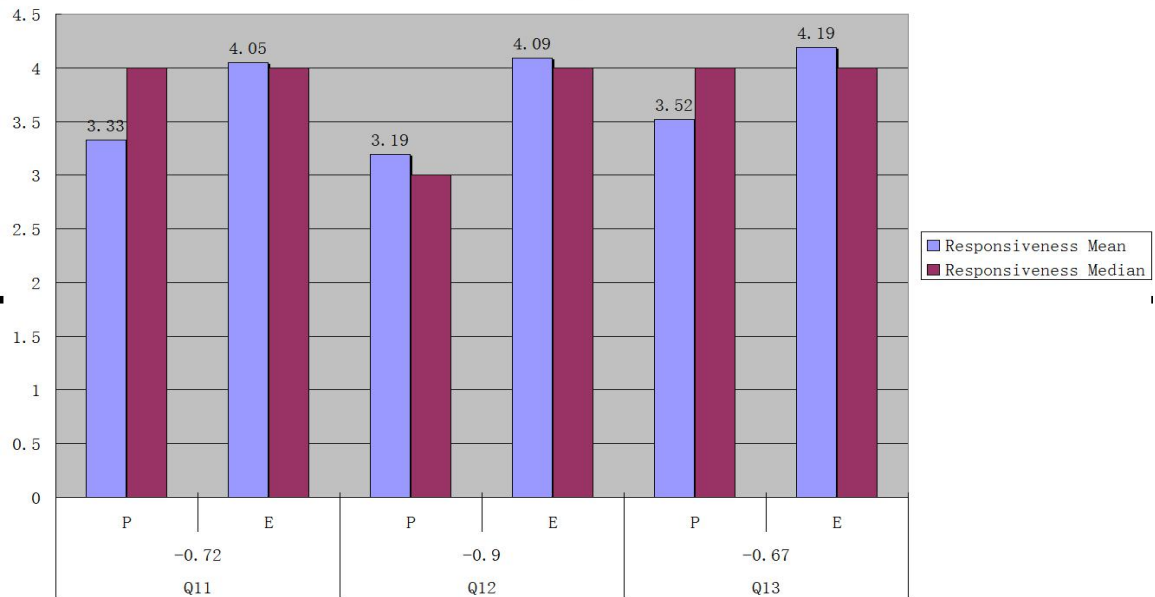
From the table above, we can clearly find that the gap is the biggest between expectations and perceptions in Q7 (you are seen according to your expectation in this hospital), followed by Q8 (your problems get solved promptly). The comparison chart as the following, nearly half of the patients after admission are not satisfied for medical care (expectation: satisfaction of 87 people; perception: satisfaction of 49 people). In solve the problem of patients, the number of dissatisfied people is increased from 3 to 17. It means the hospital's reputation and image are good among in the patients and it makes patients trust this hospital, increased the expectation value for providing services from the hospital , but in fact the hospital did not reach the patient expectations, it lacks to perform their duties effectively. It is a problem for managers how to make rational personnel distribution, effective work coordination and reasonable resource utilization.



② Responsiveness and patient satisfaction

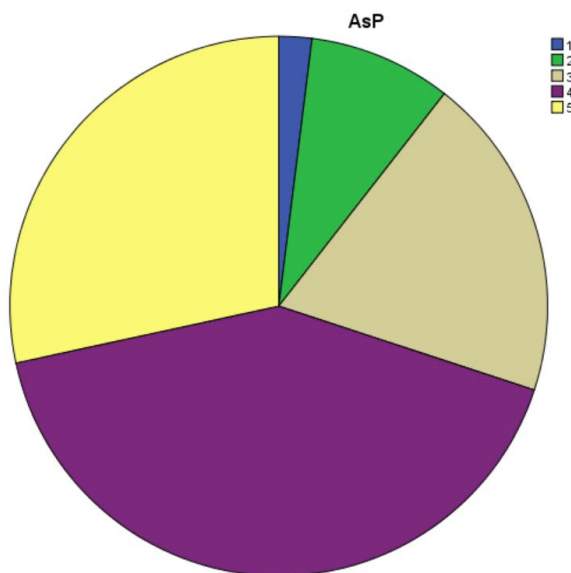
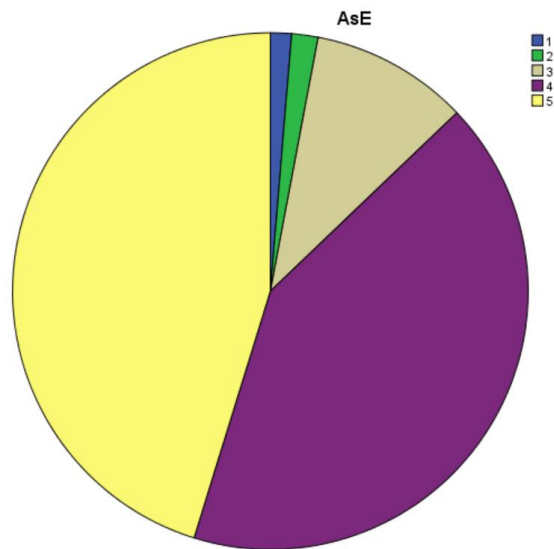
From Figure 3.2.1, we can see that  $Q=-0.76$ ,  $Weight=14.83$  in responsiveness dimension. According to the formula two we can get  $Q=-11.31$ . In each index only Q12 (hospital staff does not keep your waiting) the difference reached  $-0.9$  which the treatment process of hospital does not do perfect in that cause the overall satisfaction of patients to the treatment process is only 44.6%. In all the index of satisfaction evaluation, it is at a low level. This result does match with the phenomenon of the difficulty of registration and difficult hospitalization in China's tertiary hospitals in

recent years. First of all, it spends long time to wait in the registration queue; secondly, because of limited resources and the great number of patients, so it causes waste lots of time to get treatment; thirdly, admission formalities is complicated, patients need to run back down the stairs to do that; finally, the position of guide service card is not obvious and clear which result in some patients cannot find what they need the target, so they waste the time.



### ③ Assurance and the patient satisfaction

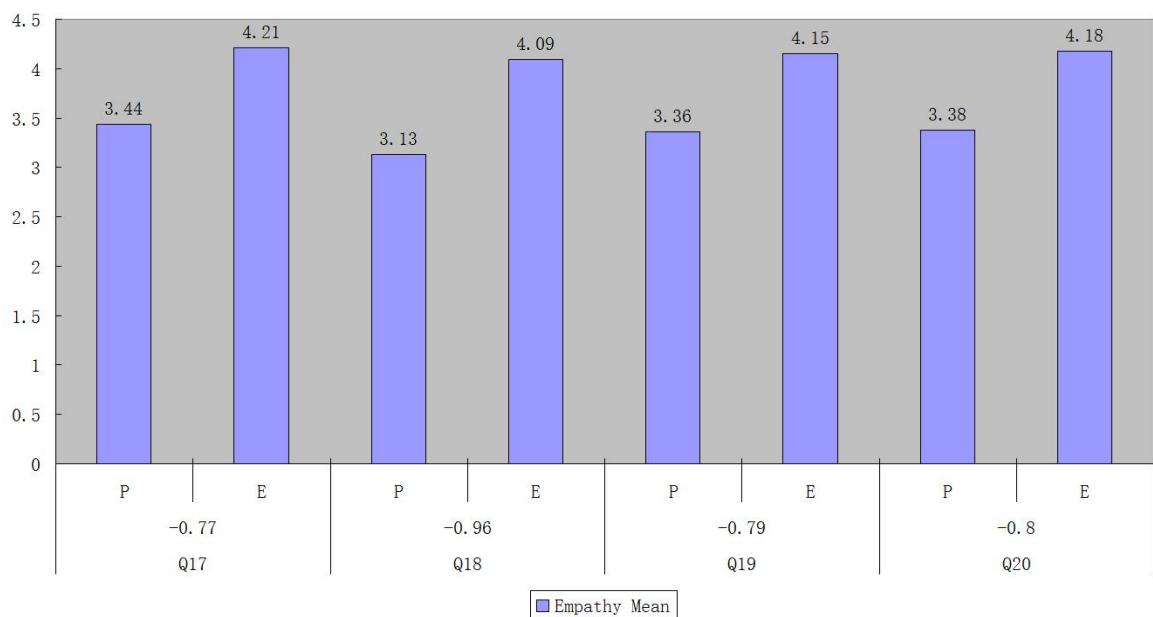
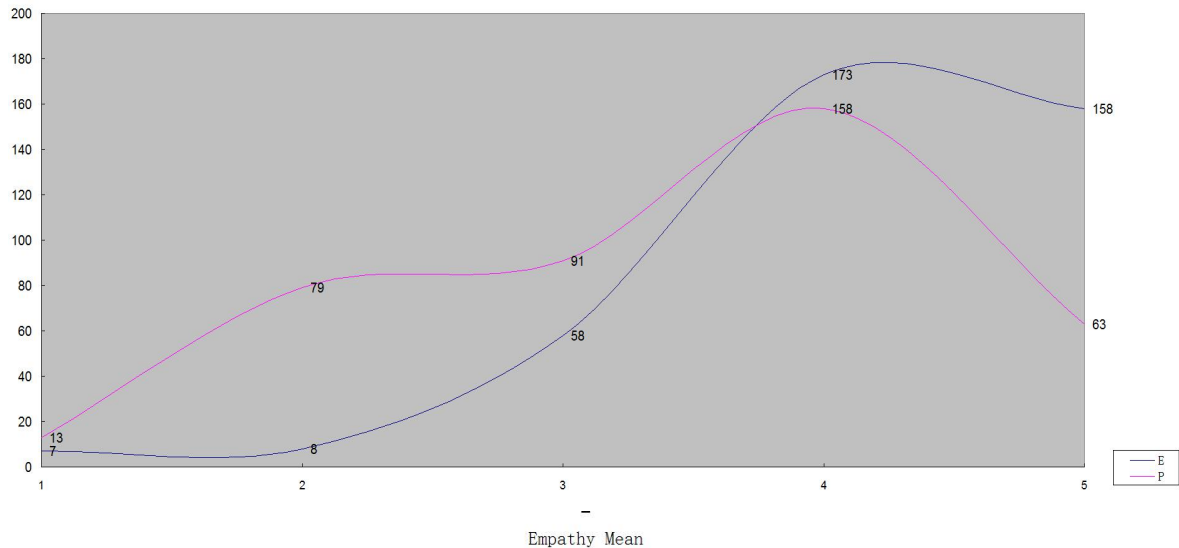
As shown in table 3.2.1, assurance's weight is 11.33,  $Q=-4.788$ . it illustrates that medical technology and professional knowledge are the highest in satisfaction evaluation among in the five dimensions. It is the crucial for hospital service to have advanced medical technology which determines the patients' possibility of regain health and the process of eliminating pain and recovering health. It is also the first consideration factor for patients and their families to choose hospitals, so it is occupied a very important status in the patient satisfaction system. At the same time, the following data also reflects that the healthcare staff in Department of orthopedics in Shanghai has professional medical skills and rich experience.



#### ④ Empathy and the patient satisfaction

From table 3.2.1, we know  $\overline{Qe} = \overline{P} - \overline{E} = 0.713$ , weight=18.83, according to the formula two  $Qe = -13.43$ . Patients think this dimension is important. And it is also an important component of satisfaction evaluation. According to the comparison of line chart below, before admission 81.9% of the patients think they can get good care and their need will be meet in this hospital. But only 54.7% of the patients are satisfied for the service after actual experience. It shows that hospitals have problems in caring for patients and communication between doctors and patients. The investigation data of this dimension as shown below, the patients hope healthcare

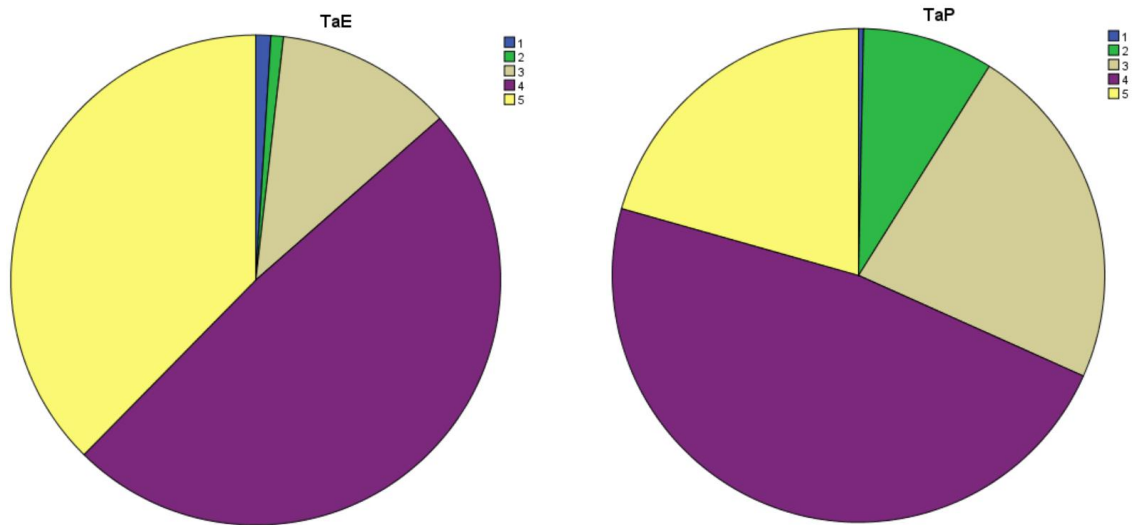
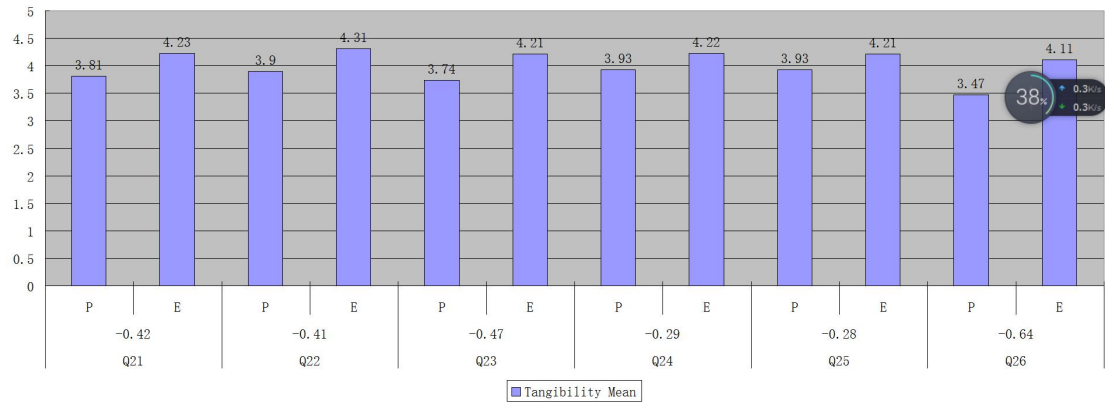
staff can respect them more (20), caring and understanding them (Q17, 18), and tell them more information about their disease (Q19). Domestic and international studies have shown that it is the positive correlation between the care from healthcare staff and patient satisfaction, especially the friendly attitude and concern from nurses<sup>44</sup> 4647.



⑤ Tangibility and the patient satisfaction

Same from table 3.2.1, weight is 13.5,  $Q=-0.61$  in this dimension. The results show that the patients are satisfied with the hospital's medical facilities. With the development of science and technology, and medical facilities are continuous

improvement which provides a favorable basis for doctors to make a clear diagnosis. Completed and advanced medical facilities make patients more satisfied, and patients are more trusted to hospitals. But in Q26 (patients' understanding of doctors' prescriptions) we know healthcare staff still need to communicate with patients in more accessible language.



## 4. Conclusion

### 4.1 Discussion

(→). Analysis of the causes of conflicts between healthcare staffs and patients in China

(1) The medical malpractice of the management causes the contradiction between healthcare staffs and patients

① The system is not perfect and the poor management, leading to the decline in the quality of medical services, making medical quality and medical safety problems to be prominent, meantime awareness of medical accident prevention is not perfect and implemented. There are existed some loopholes and pitfalls.

② Some hospital managers and medical staffs have weak legal consciousness and irregular behaviors.

③ The internal relations in the hospital fail to deal with well. The contradiction between doctors and doctors, the contradiction between doctors and nurses, and the contradiction between healthcare staff and logistical personnel and so on. Disharmony in the work environment which leads to bad mutual coordination. The patient's benefits have not been fully respected and protected.

(2) The "patient-centered" service mode in hospital have not been fully implemented

① There are many problems in service attitude. A large number of investigations show that the attitude of medical service is the main reason to cause the conflict between healthcare staffs and patients. The long-standing authority of medical staffs has not been eliminated, and the traditional medical biological model has made the feeling indifferent between healthcare staffs and patients and so on, so that the attitude of medical service has not been completely changed.



② The process to see the doctor is too complicated in that before patients see the doctor, they need to experience registration, medical treatment, inspection, payment procedures etc. Cumbersome procedures with long queuing time, which easily make patients prone to discontent. When they meet some medical staffs with awful, the contradiction will happen at any moment.

③ In the process of diagnosis and treatment, some healthcare personnel lack of respect and compassion for the patient, and the service attitude is cold and hard, they are no patient to listen to a few words from patients before give them prescription. And doctors do not explain for many medical terms. In the existing disputes between doctors and patients, 80% comes from the service problems<sup>48</sup>.

(3) The excessive medical treatment and medication overuse

In the process of medical service, there is an unequal relationship between healthcare staff and patients because of the difference of professional knowledge and skills, information asymmetry which healthcare staff has the leading position. Under the system of medical staff income related to medical income, the phenomenon of excessive medical treatment will be inevitable in clinical. At the same time, this system will make some doctors use drugs for patients who do not need it and they will give patients high priced drugs instead of cheap drugs. Those cause it lacks of respect and trust between doctors and patients. It not only damages the image of the medical staff, also caused the limited medical resources are wasted.

(4) Some medical staffs is be in low occupation quality which leads to conflicts between healthcare staff and patients

With the development of society and medical science and the improvement of patients' demands, we have the higher demands to the quality of medical staff. However, as some medical staff are not professional and poor professional quality

with lacking of effective communication with patients that cause the medical disputes. For example, some medical personnel lack of clinical experience, the limited level of diagnosis and treatment, the non-standard operation, resulting in misdiagnosis and under diagnosis in the process of treatment; some staffs lack of communication with patients in the aspects of illness, therapeutic regimen and complications or explanation is not clear, causing the patient misunderstanding; some medical staff are indifference and unfriendly, some even speak bad words to patients and their family lead to be dissatisfied.

(5) The wrong concept for healthcare service is completely equivalent to the commercial service

Influenced by the market economy, people regard the relationship between doctors and patients as a pure relationship between buying and selling. Patients take the requirements to hospital for granted, such as medical environment, service measures, treatment techniques, costs, etc., and when these requirements are not met, conflicts between healthcare staff and patients are very easy to happen.

(6) The contradiction from the high prices of medical does not match to the patient expects

Patients with very high expectations to the hospital. They do not know well to the particularity of the medical industry, high risk, the individual difference and the development of medicine. Once the treatment effect is not ideal or high medical expenses or disease become worse, patients are angry at the hospital and asked the hospital to take responsibility.

(7) The healthcare environment is not humanized enough

The medical environment is the foundation of patients' whole service experience. If

the environment is too noisy, or the conditions of diagnosis are simple and crude, the patient's privacy cannot be guaranteed, or there has the risk of cross infection, etc., these will cause patient dissatisfaction. Secondly, the layout of the Department and the scientific planning of service facilities that can effectively improve the patient's time efficiency and psychological feelings. Humanized medical environment can offer patients convenient and speedy service.

#### (8) Other factors

Whether the prices of drug and medical charges are open, reasonable and transparent or not; and management and training of trainees.

## **4.2 Proposals for future implementation**

### (1) To improve the quality of healthcare technology continuously

The improvement of medical technology quality is the key to improve the hospital's own strength and better service for patients. Hospitals should combine their own characteristics and adopt various measures to continuously improve healthcare standards.

First of all, we should strengthen the team building of medical staff and pay attention to the recruitment, talent introduction and training. Through the regular vocational education and technical training for healthcare personnel to improve their comprehensive quality in professional fields. For new healthcare staffs, we will strengthen clinical skills training then give them rigorous assessments.

Secondly, hospitals should strengthen the propaganda and education in medical quality and safety, so that medical staff can fully realize the importance of medical quality to establish management organizations of medical quality which are responsible for the quality supervision in hospitals. Managers should require medical staff to strictly obey the clinical procedures, and make emergency plans, supervision

and control through inspection, timely detection of problems, and eliminate hidden dangers.

Thirdly, the hospital will check and update the medical equipment regularly in the hospital, strengthen the purchase of large-scale advanced medical equipment, and comprehensively improve the level and capacity of medical services.

Finally, it is suggested that the hospital should increase reasonably the amount of medical staff, scientifically placement the staff and arrange reasonable rest. To ensure that the proportion of doctors and patients is within a reasonable range, so that each patient has sufficient time to communicate with the doctor to understand the condition. At the same time the hospital should increase the nursing or care workers, allowing them to undertake some transactional work, reducing the time that nurses engaged in the transactional affairs, increasing the time their care about patients. Hospital should give nurses back to the majority of patients<sup>49</sup>. China need to solve the contradiction of insufficient number of nurses and to meet the needs of patients.

(2) To strengthen the doctor-patient communication and implement patient-centered service mode

First of all, the healthcare staff use the time of every morning nursing round to greet the patient and their family, and ask about situation of sleep, diet and disease recovery from patients. Pay attention to civilized language, and healthcare staff can accurately remember the patient's name and explain the problems clearly form patients and their families. Staffs do not shift the responsibilities to each other<sup>50</sup>. Make sure that the channels of communication between doctors and patients are open, allowing doctors and patients to understand and trust each other.

Secondly, smiling service, this is a special kind of interpersonal relationships between staffs and patients. The harmonious doctor-patient relationship is an interactive and win-win. Hospitals can regularly organize to learn the communication skills, understand the different patient's medical needs, improve the ability to communicate with patients, ensure medical treatment activities carried out smoothly<sup>51</sup>. During the

communication with patients, staffs need to improve work methods then continuously improve patient satisfaction.

### (3) The optimization of medical process

The design of hospital service process must take the patient as the basic starting point. Hospitals try to minimize or integrate unnecessary outpatient and inpatient procedures and shorten the time of the necessary process as much as possible. Hospitals can provide personalized visits and hospital reservation services according to their needs. Make sure the hospitalized patients, especially those with more severe diseases who can be got the treatment in time.

We can also establish exploratively the special wards and special outpatient service to meet the diverse and personalized needs of patients. The hospital can also use modern technology, such as install the TV in the waiting room and the establishment of the WiFi to achieve functions that mobile phone connects interworking payment, it can also alleviate patients' anxiety because of waiting and it provides the convenient services for patients.

### (4) To reduce the healthcare costs

We know our patients are mainly low-income groups from this study. During the process of treatment, patients and their families not only suffer great psychological pressure but also face the high medical expenses, it is easy to cause the patient and family dissatisfaction, which leads to low patient satisfaction. It needs the joint participation of the health administrative departments and medical institutions at all levels to make the healthcare costs reasonable.

First of all, we should promote the reform of the drug price system to reduce the circulation of drugs and lower the selling price.

Secondly, healthcare staff should try to reduce the hospitalization time and complications of patients. We should save medical resources and reduce medical costs

to reduce the patient's financial burden.

Finally, we should establish a sound medical insurance system to further improve and expand the coverage various medical insurance range.

## Bibliography:

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- <sup>1</sup> Zhang, J. H. 2007..Investigation on the Satisfaction of Inpatients in a Grade Three Hospital. *Chinese Journal of Clinical*, 5: 1-3. (in Chinese).
- <sup>2</sup> Donabedian, A. 1987. Guideposts to a conference on quality assessment and assurance. In: Shanahan M(ed). *Proceedings of an international conference on quality assurance in heathcare*. Chicago: Joint Commission on Accreditation of Hospitals.
- <sup>3</sup> Hoppe E. Erfolg und Misserfolg, 1930. *PsicologischeForschung*, 14:1-62.
- <sup>4</sup> Lewin, K. 1936. *Principles of Topological Psyechology*. New York: McGRAM-HILL BOOK Company
- <sup>5</sup> Cardozo, R. N. 1965. An Experimental Study of Customer Effort, Expectation and Satisfaction. *Journal of Marketing Research*, 1965, 2(8): 244-249.
- <sup>6</sup> Howard, J. A., & Jagish, N. S. 1969. *The Theory of Buyer Behavior*. New York: John Wiley & Sons,Inc.
- <sup>7</sup> Millana, Angel, Esteban, Agueda, 2004. Development of a multiple-item scale for measuring customer satisfaction in travel agencies services. *Tourism Management*, 25: 533–546.
- <sup>8</sup> Unpublished documents. 2011. Measuring consumer satisfaction in health care sector: The applicability of servqual. *International Refereed Research Journal*, 2(4): 149. Available at: [www.researchersworld.com](http://www.researchersworld.com).
- <sup>9</sup> Oliver, R. L. 1997. *Satisfaction: A behavioral perspective on the consumer*. New York: The McGraw-Hill Company, Inc.
- <sup>10</sup> Allen, D. R., & Rao, T. R. 2000. *Analysis of customer satisfaction data*. Milwaukee: American Society for Quality Press.
- <sup>11</sup> Cardozo, R. N. 1965. An experimental study of customer effort, expectation and satisfaction. *Journal of Marketing Research*, 2(3).
- <sup>12</sup> Hopkins, A. 1990. *Measuring the quality of medical care*. London: Royal College of Physicians.
- <sup>13</sup> Murante, A. M. 2010. *Patient satisfaction: a strategic tool for health services management*. Available at: [http://www.phdmanagement.sssup.it/documenti/awarded/murante\\_thesis.pdf](http://www.phdmanagement.sssup.it/documenti/awarded/murante_thesis.pdf)
- <sup>14</sup> 1999. *Journal of Nursing Management*,7: 19-28.
- <sup>15</sup> Chakraborty, R., & Majumdar. 2011. A. Measuring consumer satisfaction in health

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- care sector: The applicability of servqual." *Researchers World* 2, 4: 149.
- <sup>16</sup> Available at:  
[http://www.answers.com/Q/Difference\\_between\\_customer\\_Perception\\_and\\_expectation](http://www.answers.com/Q/Difference_between_customer_Perception_and_expectation)
- <sup>17</sup> Risser, N. L. 1965. Development of an Instrument to Measure Patient Satisfaction. *Journal of Marketing Research*, 2(8): 244-249.
- <sup>18</sup> Guo, Q., Ren L. L., & Fan, S. C. 2000. Application of customer principle in the improvement of continuous medical quality. *Chinese Journal of Hospital Administration*, 16(9): 556-558. (In Chinese).
- <sup>19</sup> Alexander, R. S. 1960. *Marketing Definitions, A Glossary of Marketing Terms, Committee on Definitions of the American Marketing Association* (Chicago: American Marketing Association), p. 21.
- <sup>20</sup> Gronroos, & Christian. 1990. Relationship approach to marketing in service contexts: The marketing and organizational behavior interface. *Journal of business research*, 20(1): 3-11.
- <sup>21</sup> Goldstein, Meyer, S. et al. 2002. The service concept: the missing link in service design research?. *Journal of Operations management*, 20(2): 121-134.
- <sup>22</sup> Available at: <https://edukalife.blogspot.pt/2013/02/service.html>
- <sup>23</sup> Li, H. Y. 1996. *Service marketing*, Beijing: Enterprise Management Press. (In Chinese).
- <sup>24</sup> Available at:  
<http://cascadebusnews.com/business-tips/marketing/176-services-marketing-focus-on-service-characteristics-to-create-competitive-advantage>
- <sup>25</sup> Available at  
<https://wenku.baidu.com/view/d220aee65122aeea998fcc22bcd126fff7055d9b.html>
- <sup>26</sup> Ji, Z. Y., & Xu, M. 1999. Service blueprint method: An effective service design method. *Journal of China Textile University* 25(5): 77-79. (In Chinese).
- <sup>27</sup> Available at:  
<http://www.chinaacc.com/new/63/67/108/2000/7/ad540151011101700022490.htm>
- <sup>28</sup> Tang, W. X., & Yi, L. H. 2003. *An outline to hospital service strategy*. People's Health Publishing Company. (In Chinese).
- <sup>29</sup> Maslow, A. 1954. *Motivation and personality*. New York, NY: Harper.
- <sup>30</sup> Kremer, Kremer, W., & Hammond, Claudia. 2013. Abraham Maslow and the



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pyramid that beguiled business. *BBC news magazine*.

- <sup>31</sup> Available at:  
[https://en.wikipedia.org/wiki/Maslow%27s\\_hierarchy\\_of\\_needs#cite\\_note-Maslow.2C\\_A.\\_1954-3](https://en.wikipedia.org/wiki/Maslow%27s_hierarchy_of_needs#cite_note-Maslow.2C_A._1954-3)
- <sup>32</sup> Oliver, R. L., Balakrishnan, P. V. S. & Barry, B. 1994. Outcome Satisfaction in Negotiator: A test of expectancy disconfirmation. *Organizational Behavior and Human Decision Processes*, 60(2): 252-275.
- <sup>33</sup> Parasuram, A., Valarie A. Z., & Leonard L. B., A conceptual model of service quality and its implication for future research. *Journal of Marketing*, 49: 44.
- <sup>34</sup> Available at: <https://en.wikipedia.org/wiki/SERVQUAL>
- <sup>35</sup> Parasuraman, A., Ziethaml, V. & Berry, L. L. 1988. Servqual: A multiple- item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 62(1): 12-40.
- <sup>36</sup> Parasuraman, A, Ziethaml, V. & Berry, L. L., 1988. Servqual: A multiple- item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 62(1): 22, 25 and 29
- <sup>37</sup> Cronin, J., Joseph J., & Steven A. T. 1992. Measuring service quality: A reexamination and extension. *The journal of marketing*: 55-68.
- <sup>38</sup> Tzeng, Gwo-Hshiung, & Hung-Fan Chang. 2011. Applying importance-performance analysis as a service quality measure in food service industry. *Journal of technology management & innovation*, 6(3): 106-115.
- <sup>39</sup> LC journals, academic journals, economic forums 2012011 period
- <sup>40</sup> Available at:  
[https://www.ibm.com/support/knowledgecenter/en/SSLVMB\\_24.0.0/spss/base/idh\\_reli.html](https://www.ibm.com/support/knowledgecenter/en/SSLVMB_24.0.0/spss/base/idh_reli.html)
- <sup>41</sup> Available at:  
<http://www.cis.pku.edu.cn/faculty/vision/zlin/Courses/DA/DA-Class7.pdf>
- <sup>43</sup> “*Shanghai Statistical Year Book of 2016*” by Shanghai Municipal Health and Family Planning Commission (In Chinese).
- <sup>44</sup> Johansson, P., Magnus O., & Fridlund, B. 2002. Patient satisfaction with nursing care in the context of health care: A literature study. *Scandinavian Journal of Caring Sciences*, 16(4): 337-344.

- 
- <sup>46</sup> Goh, Li, M. et al. 2016. A descriptive quantitative study on multi-ethnic patient satisfaction with nursing care measured by the Revised Humane Caring Scale. *Applied Nursing Research*, 31: 126-131.
- <sup>47</sup> Zhang, R. M. 2007. Analysis of the relationship between nurses' job satisfaction and patient satisfaction. *Journal of Nursing Science: Surgery Edition*, 22(11): 9-10. (In Chinese).
- <sup>48</sup> Medical information network: Bacheng medical disputes related medical ethics, 2004.6.30
- <sup>49</sup> Wang, L. F., & Guo S. P. 2016. Current Situation and Research Progress of Nurses' Position Management in China. *Chinese Journal of Nursing Research*, 5(30): 1554-1556.
- <sup>50</sup> Ji J. S. 2004. Patient satisfaction survey is an important part of medical quality evaluation. *Chinese Hospital Management Journal*, 20(1): 49-50. (In Chinese).
- <sup>51</sup> Wanzer, M. B., Melanie B. B., & Gruber, K. 2004. Perceptions of health care providers' communication: relationships between patient-centered communication and satisfaction. *Health communication*, 16(3): 363-384.

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(1) Reliability: 6-10 questions of the questionnaire, whether the hospital provide the promised ability safely and specifically or not.

6. This hospital is trustworthy

7. You are seen according to your expectation in this hospital

8. Your problems get solved promptly

9. You are given/received the required treatment

10. The healthcare workers record your treatment information accurately

(2) Responsiveness: 11-13 questions of the questionnaire, it means the hospital has keen insight into reasonable requirements of patients and the willingness to provide required service and the speed of service.

11. Hospital staffs give your prompt attention

12. Hospital staff does not keep your waiting

13. Hospital staff helps according to your need

(3) Assurance: 14-16 questions of the questionnaire, it refers to the hospital pays attention to patients and safeguard the interests of patients which enhance the trust of patients for hospital.

14. Doctor is qualified

15. The healthy staff is trustworthy

16. Hospital staffs are courteous when they give your treatments

(4) Empathy: 17-20 questions of the questionnaire, the hospital gives the patients enough care and understand truly their needs and respect each patient.

17. Hospital staffs are caring about you

18. Staffs give you individual attention

19. Nurse knows your needs

20. Staff calls you by name

(5) Tangibility: 21-26 questions of the questionnaire, it points the appearance of physical performance, namely “tangible service”, such as the facilities of hospital and environment, etc.

21. Hospital has advanced facilities

- 
22. Staffs dress are neat
  23. Doctors office is clean
  24. Nurse station is tidy and clean
  25. Hospital staff use standard instruments
  26. Prescription given is easy for you to understand in this hospital

Questionnaire in English Version :

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## Hospital Satisfaction Survey

Dear patient: Hello. In order to improve the quality of hospital healthcare service and improve medical environment and better to service for patients. Please make an evaluation and comparison between expectations of before admission and after the experience in the hospital, so that we can improve our deficiencies according to your advice and improve your satisfaction to our hospital. Thank you for your time and cooperation!

1、 How old are you

- A. under 20 years old( including 20)
- B. 21-30 years old
- C. 31-40 years old
- D. 41-50 years old
- E. above 50 years old

2、 What is your gender

- A. female
- B. male

3、 Where are you from

- A. urban
- B. rural

4、 What is your level of education

- 
- A. primary education
  - B. secondary education
  - C. Undergraduate education
  - D. Postgraduate education
  - E. Doctor and above

5、 What is your income level (per year)

- A. 0-36.000 RMB ( correspond to 0-3000 RMB per month )
- B. 36.000-72.000 RMB ( correspond to 3000-6000 RMB per month )
- C. 72.000-120.000 RMB ( correspond to 6.000-10.000 RMB per month )
- D. 120.000-180.000 RMB ( correspond to 10.000-15.000 RMB per month )
- E. 180.000-240.000 RMB ( correspond to 15.000-20.000 RMB per month )
- F. 240.000-480.000 RMB ( correspond to 20.000-40.000 RMB per month )
- J. above 480.000 RMB ( correspond to above 40.000RMB per month )

6、 This hospital is trustworthy

	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Before Admission	○	○	○	○	○
Admission and Discharge	○	○	○	○	○

7、 You are seen according to your expectation in this hospital

	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Before Admission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admission and Discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8、 Your problems get solved promptly

	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Before Admission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admission and Discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

9、 You are given/received the required treatment

	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Before Admission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Admission and Discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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10、 The healthcare workers record your treatment information accurately

	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Before Admission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admission and Discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11、 Hospital staffs give your prompt attention

	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Before Admission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admission and Discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12、 Hospital staff does not keep your waiting



	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Before Admission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admission and Discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13、 Hospital staff helps according to your need

	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Before Admission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admission and Discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

14、 Doctor is qualified

	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Before Admission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Admission and Discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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15、 The healthy staff is trustworthy

	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Before Admission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admission and Discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16、 Hospital staffs are courteous when they give your treatments

	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Before Admission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admission and Discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17、 Hospital staffs are caring about you

	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Before Admission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admission and Discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18、 Staffs give you individual attention

	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Before Admission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admission and Discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19、 Nurse knows your needs

	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Before Admission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Admission and Discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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20、 Staff calls you by name

	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Before Admission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admission and Discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21、 Hospital has advanced facilities

	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Before Admission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admission and Discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22、 Staffs dress is neat

	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Before Admission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admission and Discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23、 Doctors office is clean

	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Before Admission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admission and Discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24、 Nurse station is tidy and clean

	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Before Admission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Admission and Discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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25、 Hospital staff use standard instruments

	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Before Admission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admission and Discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

26、 Prescription given is easy for you to understand in this hospital

	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
Before Admission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Admission and Discharge	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Questionnaire in Chinese Version:

## 医院满意度调查

尊敬的患者：您好，为了提高医院的医疗服务质量，改善就医环境，更好地为患者服务。请您在对入住我院前的期待和入住我院后的体验做一个评价对比，以便我们针对您的建议来改善我们的不足，提高您对我们医院的满意度。感谢您的配合！

### 1、你的年龄 (单选题 \*必答)

- A. 20 及 20 岁以下
- B. 21-30 岁
- C. 31-40 岁
- D. 41-50 岁
- E. 50 岁以上

### 2、您的性别 (单选题 \*必答)

- A. 女性
- B. 男性

### 3、您来自？ (单选题 \*必答)

- A. 城市
- B. 乡镇

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4、您的受教育水平是 (单选题 \*必答)

- A. 小学教育
- B. 中学教育
- C. 大学教育
- D. 硕士教育
- E. 博士及以上学历

5、您每年总收入是 (单选题 \*必答)

- A. 0-3.6万人民币 (相当于每个月 0-3000)
- B. 3.6万-7.2万人民币 (相当于每个月 3000-6000)
- C. 7.2万-12万人民币 (相当于每个月 6000-10000)
- D. 12万-18万人民币 (相当于每个月 10000-15000)
- E. 18万-24万人民币 (相当于每个月 15000-20000)
- F. 24万-48万人民币 (相当于每个月 20000-40000)
- J. 48万人民币以上 (相当于每个月 40000 以上)

6、这家医院是值得信赖的 (矩阵单选题 \*必答)

	入院前您对我们医院的 认知	入院后您的真实感受
绝对不赞同	<input type="radio"/>	<input type="radio"/>
不赞同	<input type="radio"/>	<input type="radio"/>
一般	<input type="radio"/>	<input type="radio"/>
赞同	<input type="radio"/>	<input type="radio"/>
非常赞同	<input type="radio"/>	<input type="radio"/>

7、您在医院得到的照顾符合您的期望 (矩阵单选题 \*必答)



	入院前您对我们医院的 认知	入院后您的真实感受
绝对不赞同	<input type="radio"/>	<input type="radio"/>
不赞同	<input type="radio"/>	<input type="radio"/>
一般	<input type="radio"/>	<input type="radio"/>
赞同	<input type="radio"/>	<input type="radio"/>
非常赞同	<input type="radio"/>	<input type="radio"/>

8、您的问题能得到及时的解决 (矩阵单选题 \*必答)

	入院前您对我们医院的 认知	入院后您的真实感受
绝对不赞同	<input type="radio"/>	<input type="radio"/>
不赞同	<input type="radio"/>	<input type="radio"/>
一般	<input type="radio"/>	<input type="radio"/>
赞同	<input type="radio"/>	<input type="radio"/>
非常赞同	<input type="radio"/>	<input type="radio"/>

9、您得到了您需要的治疗 (矩阵单选题 \*必答)

	入院前您对我们医院的 认知	入院后您的真实感受
绝对不赞同	<input type="radio"/>	<input type="radio"/>
不赞同	<input type="radio"/>	<input type="radio"/>
一般	<input type="radio"/>	<input type="radio"/>
赞同	<input type="radio"/>	<input type="radio"/>
非常赞同	<input type="radio"/>	<input type="radio"/>

10、医院工作人员准确记录您的就诊信息 (矩阵单选题 \*必答)

	入院前您对我们医院的 认知	入院后您的真实感受
绝对不赞同	<input type="radio"/>	<input type="radio"/>
不赞同	<input type="radio"/>	<input type="radio"/>
一般	<input type="radio"/>	<input type="radio"/>
赞同	<input type="radio"/>	<input type="radio"/>
非常赞同	<input type="radio"/>	<input type="radio"/>

11、医护人员能及时的关注您 (矩阵单选题 \*必答)

	入院前您对我们医院的 认知	入院后您的真实感受
绝对不赞同	<input type="radio"/>	<input type="radio"/>
不赞同	<input type="radio"/>	<input type="radio"/>
一般	<input type="radio"/>	<input type="radio"/>
赞同	<input type="radio"/>	<input type="radio"/>
非常赞同	<input type="radio"/>	<input type="radio"/>

12、医院门诊工作安排有序，病人能及时就诊 (矩阵单选题 \*必答)

	入院前您对我们医院的 认知	入院后您的真实感受
绝对不赞同	<input type="radio"/>	<input type="radio"/>
不赞同	<input type="radio"/>	<input type="radio"/>
一般	<input type="radio"/>	<input type="radio"/>
赞同	<input type="radio"/>	<input type="radio"/>
非常赞同	<input type="radio"/>	<input type="radio"/>

13、医疗人员能根据您的需求给您提供帮助 (矩阵单选题 \*必答)

	入院前您对我们医院的 认知	入院后您的真实感受
绝对不赞同	<input type="radio"/>	<input type="radio"/>
不赞同	<input type="radio"/>	<input type="radio"/>
一般	<input type="radio"/>	<input type="radio"/>
赞同	<input type="radio"/>	<input type="radio"/>
非常赞同	<input type="radio"/>	<input type="radio"/>

14、医院的医生具备执业资格 (矩阵单选题 \*必答)

	入院前您对我们医院的 认知	入院后您的真实感受
绝对不赞同	<input type="radio"/>	<input type="radio"/>
不赞同	<input type="radio"/>	<input type="radio"/>
一般	<input type="radio"/>	<input type="radio"/>
赞同	<input type="radio"/>	<input type="radio"/>
非常赞同	<input type="radio"/>	<input type="radio"/>

15、医院的医护人员是值得信赖的 (矩阵单选题 \*必答)

	入院前您对我们医院的 认知	入院后您的真实感受
绝对不赞同	<input type="radio"/>	<input type="radio"/>
不赞同	<input type="radio"/>	<input type="radio"/>
一般	<input type="radio"/>	<input type="radio"/>
赞同	<input type="radio"/>	<input type="radio"/>
非常赞同	<input type="radio"/>	<input type="radio"/>

16、医院的医护人员在给您进行治疗是亲切礼貌的 (矩阵单选题 \*必答)

	入院前您对我们医院的 认知	入院后您的真实感受
绝对不赞同	<input type="radio"/>	<input type="radio"/>
不赞同	<input type="radio"/>	<input type="radio"/>
一般	<input type="radio"/>	<input type="radio"/>
赞同	<input type="radio"/>	<input type="radio"/>
非常赞同	<input type="radio"/>	<input type="radio"/>

17、医护人员是关心您的 (矩阵单选题 \*必答)

	入院前您对我们医院的 认知	入院后您的真实感受
绝对不赞同	<input type="radio"/>	<input type="radio"/>
不赞同	<input type="radio"/>	<input type="radio"/>
一般	<input type="radio"/>	<input type="radio"/>
赞同	<input type="radio"/>	<input type="radio"/>
非常赞同	<input type="radio"/>	<input type="radio"/>

18、您得到医护人员的个人关注 (矩阵单选题 \*必答)

	入院前您对我们医院的 认知	入院后您的真实感受
绝对不赞同	<input type="radio"/>	<input type="radio"/>
不赞同	<input type="radio"/>	<input type="radio"/>
一般	<input type="radio"/>	<input type="radio"/>
赞同	<input type="radio"/>	<input type="radio"/>
非常赞同	<input type="radio"/>	<input type="radio"/>

19、护士了解您的需求 (矩阵单选题 \*必答)

	入院前您对我们医院的 认知	入院后您的真实感受
绝对不赞同	<input type="radio"/>	<input type="radio"/>
不赞同	<input type="radio"/>	<input type="radio"/>
一般	<input type="radio"/>	<input type="radio"/>
赞同	<input type="radio"/>	<input type="radio"/>
非常赞同	<input type="radio"/>	<input type="radio"/>

20、医护人员在给您进行治疗时会叫您的名字 (矩阵单选题 \*必答)

	入院前您对我们医院的 认知	入院后您的真实感受
绝对不赞同	<input type="radio"/>	<input type="radio"/>
不赞同	<input type="radio"/>	<input type="radio"/>
一般	<input type="radio"/>	<input type="radio"/>
赞同	<input type="radio"/>	<input type="radio"/>
非常赞同	<input type="radio"/>	<input type="radio"/>

21、医院的医疗设备先进 (矩阵单选题 \*必答)

	入院前您对我们医院的 认知	入院后您的真实感受
绝对不赞同	<input type="radio"/>	<input type="radio"/>
不赞同	<input type="radio"/>	<input type="radio"/>
一般	<input type="radio"/>	<input type="radio"/>
赞同	<input type="radio"/>	<input type="radio"/>
非常赞同	<input type="radio"/>	<input type="radio"/>

22、医院的工作人员衣着整洁干净 (矩阵单选题 \*必答)

	入院前您对我们医院的 认知	入院后您的真实感受
绝对不赞同	<input type="radio"/>	<input type="radio"/>
不赞同	<input type="radio"/>	<input type="radio"/>
一般	<input type="radio"/>	<input type="radio"/>
赞同	<input type="radio"/>	<input type="radio"/>
非常赞同	<input type="radio"/>	<input type="radio"/>

23、医院的医生办公室干净整洁 (矩阵单选题 \*必答)

	入院前您对我们医院的 认知	入院后您的真实感受
绝对不赞同	<input type="radio"/>	<input type="radio"/>
不赞同	<input type="radio"/>	<input type="radio"/>
一般	<input type="radio"/>	<input type="radio"/>
赞同	<input type="radio"/>	<input type="radio"/>
非常赞同	<input type="radio"/>	<input type="radio"/>

24、医院的护士站干净整洁 (矩阵单选题 \*必答)

	入院前您对我们医院的 认知	入院后您的真实感受
绝对不赞同	<input type="radio"/>	<input type="radio"/>
不赞同	<input type="radio"/>	<input type="radio"/>
一般	<input type="radio"/>	<input type="radio"/>
赞同	<input type="radio"/>	<input type="radio"/>
非常赞同	<input type="radio"/>	<input type="radio"/>

25、医院的医护人员使用的设备是符合标准的 (矩阵单选题 \*必答)

	入院前您对我们医院的 认知	入院后您的真实感受
绝对不赞同	<input type="radio"/>	<input type="radio"/>
不赞同	<input type="radio"/>	<input type="radio"/>
一般	<input type="radio"/>	<input type="radio"/>
赞同	<input type="radio"/>	<input type="radio"/>
非常赞同	<input type="radio"/>	<input type="radio"/>

26、医院医生给的处方是容易理解的 (矩阵单选题 \*必答)

	入院前您对我们医院的 认知	入院后您的真实感受
绝对不赞同	<input type="radio"/>	<input type="radio"/>
不赞同	<input type="radio"/>	<input type="radio"/>
一般	<input type="radio"/>	<input type="radio"/>
赞同	<input type="radio"/>	<input type="radio"/>
非常赞同	<input type="radio"/>	<input type="radio"/>