

# *An Empirical Research on Evaluation of Service Quality of Nursing Homes in Tianjin*

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**Abstract**—with the continuous improvement of urban modernization and the gradual social transformation, the problem of aging has gradually emerged and become a social livelihood problem. Therefore, nursing homes have mushroomed in recent years, showing its vitality. But their service quality varied greatly. Taking Tianjin as an example, on the basis of SERVQUAL theory, we found out the existing problems of nursing homes through the questionnaire survey, such as problems of single function, backward infrastructure, a lack of professional service and so on. For corresponding solutions, we suggest that nursing homes offer more humanized and diversified service and build professional team to promote the reform and optimization of nursing homes.

**Keywords**—Population aging; Nursing home; Service quality; SERVQUAL theory

## I. INTRODUCTION

(1)The concept of "service quality" was repeatedly mentioned in this study. It refers to the characteristics of intangible services. One person offered services to meet other people's existing requirements and potential demands. It also refers to the satisfaction degree of services.

In 1970s, some European and American scholars began to study service quality initially. Levi pioneered the concept of service quality in 1972. Some scholars summed up that service quality depended on whether it can meet the default standards [1]. Study updated that it should follow customers' satisfaction, and the concept of service quality and tangible product quality should be clarified firstly [2]. The concept about optimization of service quality represented a milestone in the research field of service quality. It referred to the comparison between service expectation and service perception. And they should be put into repeated, detailed research [3]. Researchers added a more authoritative concept that service quality was the product of customers' perceived service, perceived processes, and expectations before purchase, which was gradually acceptable [4]. Another study put forward that service quality was the consistency with customers' requirements in the process of delivering service [5].

(2)Researchers raised different elements of service quality. Component factors of service quality was highly summarized, and they are design quality, production quality, process quality and output quality [6]. It was concentrated into three aspects: design quality, service quality and process quality by Olsen in 1992. After an in-depth research, three basic elements of

service quality were presented, service products, service delivery and service environment [7]. By the early 21st century, another study based on existing achievements eventually confirmed these three elements, interactive quality, output quality and quality of the physical environment [8].

(3)The model of evaluation of service quality included PZB service perception model, Gronroos perceived service quality model and Lijander and Strandvik's relationship quality model. European and American countries industrialized early. Influenced by advanced productive force and cultural values, the population structure has changed dramatically, and the phenomenon of population aging has appeared. Therefore, foreign scholars have explored the nursing homes' service quality earlier, and have studied more comprehensively.

(4) Service quality is different in different subjects. Some scholars took America [9], Japan [10] and overseas [11] as objects of study into detailed researches. We should absorb experience from their specialized service quality management and evaluation. However, the difference was that aging population in China increased rapidly before they became rich. Nursing homes' standardization of service quality was facing more severe challenges [12]. Some scholars studied evaluation of service quality of community-based home care in China's first tier cities. They suggested that service level, service resource utilization rate and evaluation system should be improved [13]. Through the study of pension situation in Taiwan area, some scholars advised institution to improve evaluation system, as well as encouraged everyone to participate in quality evaluation and establish a reward system [14]. By comparing the pension system between the United States, Japan, Hong Kong and Macao, the authors put forward the following four principles: took the elderly as the center, helped the elderly take care of themselves, institutions were responsible for preventing emergencies [15].

(5)There are many factors affecting service quality. With the help of Gronroos model, the researcher studied evaluation standards and applications of service quality in rural nursing homes from the perspective of different interest groups. Study found that the elderly in rural areas were lack of understanding of service quality. Rural nursing homes didn't attach great importance to regulations and standards [16]. Some other researchers investigated elderly patients with decompensated hepatitis C sclerosis, who were from Beijing's 59 nursing homes. According to first class index and derived two and three

class indexes, studies examined their health status considering management system quality, facilities, basic service and health management [17].

Another study took the Jiangsu Province as an example. It selected CV method to find index weight. Based on the survey data of Jiangsu Province, it showed that due to economic and other objective conditions, service quality in South Jiangsu Province and North Jiangsu Province has been polarized under the same social security system. So the Jiangsu government should provide more subsidies to nursing homes in backward areas [18].

(6) Theoretical construction of service quality evaluation. A graduate student at a university in Shanghai took nursing homes in Songshan District of Shanghai as the object of study, using the perceived service quality theory, Maslow's demand theory, customer-oriented theory, sociology and social welfare to design 4 dimensions and 24 indexes. However, there were some limitations that the author only visited ten nursing homes in a district of Shanghai [19]. Another study took Changsha as an example to investigate service quality evaluation of private nursing homes in urban city. Through the SERVQUALZ scale and weight calculation, this paper analyzed it from the five dimensions of empathy, reliability, tangibility, assurance and response, proving that there was a significant gap between the expected service and perceived service among the elderly [20].

### What is already known about the topic?

- Most scholars inclined to the qualitative research of basic theories, such as the present situation of the aged, service quality construction for the aged, but quantitative empirical research was almost blank.
- There have been many achievements on service quality evaluation of nursing homes, and most studies suggested that for the elderly there was a significant gap between the expected services and perceived services.

### What this paper adds?

- Through empirical research, results showed that there was a gap between the expected services and perceived services for the elderly, who was living in Tianjin's nursing homes.
- Nursing homes could promote service quality to improve assurance.

## II. METHOD

### A. Sample and setting

A cross-sectional questionnaire study was designed.

Setting and participants: We went to Nankai District, Hedong District, Hexi District, and Heping District, visiting 7 nursing homes of these four regions and collected first-hand data from the elderly. A total of 269 elderly people were interviewed.

### B. Measuring instrument

We used the SERVQUAL model and data were collected through questionnaires. The SERVQUAL model had five elements in measuring service quality including tangibility, reliability, assurance, response and empathy. Each item was

subdivided into several questions, and the respondents were asked to evaluate expected value and perceived value of each problem objectively. 22 relevant factors were established to explain it specifically [21]. Based on the theory of service quality, we constructed the following Table 1.

TABLE I. EVALUATION INDEX

Dimension	Measurement index
Tangibility	Good outdoor greening
	Comfortable indoor environment
	Delicious food
	Various forms of recreation
	Good infrastructure
Reliability	Complete medical facilities
	Good reputation
	Convenient rehabilitative services
Assurance	The staff are efficient
	Nutritious and hygienic food
	Strong privacy protection
	Clear and reasonable service standards
	Staff dress up neatly
	Staff have professional quality
Response	Staff are friendly and hard-working
	Staff are patient with kinds of problems
	Old people's need can be satisfied quickly
Empathy	Interaction between staff and old people is good
	Nursing homes are concerned about the mental healthy of old people
	Nursing homes develop special rehabilitation program
	Food is quite to old people's tastes
	Nursing homes are glad to listen to old people's advice and improve service in time

### C. Ethical considerations

The questionnaire survey was approved by respondents. Informed consents were obtained from all sampled nursing homes and elderly people. The survey was strictly anonymous to ensure the elderly's privacy.

## III. RESULTS

### A. Participants

A total of 295 people participated in this survey, recovering 269 valid questionnaires. The elderly whose age was between 80~89 accounted for 58.7% in the total sample, 70~79 for 25.3%, over 90 for 13.8%, 60~69 for 1.9% and people aged 60 were only for 0.3%. The majority of people were women, of which proportion reached 69.1%. While the male proportion was 30.9%. In the aspect of self-care, the majority of the respondents were lightly dependent, and its percentage was up to 57.4%. The elderly in good health accounted for 22.5%. Moderately dependent people were for 14.9% and heavily dependent people were for 5.2%. The elderly who were living alone accounted for 42%. People living with their spouse were for 23%, and people living with their children were for 26.7%. As is shown in Table 2.

TABLE II. DEMOGRAPHIC INFORMATION

Factors	Total-n (%)
Gender - %	
Female	187(69.1)
Male	83(30.9)
Age(in years) - %	
<60	1(0.3)

Cont. to TABLE II	
60-69	5(1.9)
70-79	68(25.3)
80-89	158(58.7)
≥90	37(13.8)
Healthy Condition - %	
Healthy	60(22.3%)
Slight Dependence	155(57.6)
Moderate Dependence	40(14.9%)
Severe Dependence	14(5.2%)
Living Condition - %	
Empty Nesters	113(42%)
Living with mate	62(23%)

### B. SERVQUAL theory

According to SERVQUAL (SQ) = actual perceived score (P) - expected score (E), the SQ of each dimension varied. Expected service matrix is shown in Table 3, and the perceived service matrix is shown in Table 4. Among them the gap between the expected services and perceived services of reliability was the smallest, and assurance's was the biggest. Food, service standards and staffs' professional quality should be further improved, which also showed that there remained improvement for assurance.

Through quantitative evaluation of service quality with 22 indexes, it showed that there was a gap between the expected services and perceived services for the elderly, who were living in Tianjin's nursing homes. Moreover, the evaluation results of each dimension showed differences.

## IV. DISCUSSION

### A. Grasp the development trends of nursing homes

Our society is facing the challenge of the tendency of aging. Industrialization and specialization of nursing homes are inevitable. Nursing homes are the second home for most elderly people; they should not emphasize "institution" function excessively but pursue humanized and personalized service.

### B. Strengthen the professionalism of nursing homes

Administration departments should strictly supervise whether nursing homes follow the service standards and related regulations, making the service team standardized and specialized. Nursing homes should pay more attention to professionalism when they are picking reserve talents. Recruit more medical talents and organize regular training for staffs and adopt reasonable advice from the elderly, their relatives and friends as well to narrow the gap of assurance.

## V. CONCLUSION

Tianjin has entered the aging society for more than 10 years and the number of current nursing homes has reached 437. And ninety percent of them were private institutions, of which service levels also varied widely. Nursing homes generally have the problems of small amount, slow development, unreasonable structure, low service level and so on, which are not suitable for higher demand from the aged. According to the SERVQUAL theory, there existed a gap between perceived

service and expected service for the elderly through empirical investigation. The problems of basic condition concluding eating and drinking were most obvious. Therefore, government should speed up the infrastructure construction of nursing homes and improve service quality continuously, and strive to promote welfare for the aged.

TABLE III. EXPECTED SERVICE MATRIX

LHCD	0.973	-0.028	-0.005	-0.047	0.015
SSHJ	0.995	-0.021	-0.016	-0.018	-0.013
SSGY	-0.995	0.021	0.016	0.018	0.013
XXYL	-0.983	0.011	0.013	0.025	0.016
JCSS	-0.867	-0.036	0.005	-0.082	-0.027
YLSB	0.936	-0.053	-0.009	-0.049	0.041
YFSY	0.953	-0.049	0.01	-0.049	0.029
KFHL	0.995	-0.021	-0.016	-0.018	-0.013
GZXL	0.975	-0.031	0.004	-0.03	0.02
YYWS	-0.097	-0.157	-0.599	0.563	0.197
YSBH	0.696	0.137	-0.084	0.017	-0.067
FWZZ	0.288	-0.105	0.316	0.644	0.275
CZZJ	0.059	-0.268	0.659	0.07	0.458
ZYSZ	-0.077	-0.159	0.5	0.084	-0.58
YHJY	-0.976	0.035	0.045	0.007	0.023
NXDD	-0.946	0.032	-0.012	0.036	0.036
JJXQ	0.15	0.76	0.19	0.225	0.059
GTHD	0.976	-0.022	-0.023	-0.027	0.008
XLJK	0.19	0.758	0.073	0.147	-0.103
TSHL	-0.136	0.234	0.017	-0.473	0.567
FHKW	-0.964	0.022	0.013	0.024	0.019

TABLE IV. PERCEIVED SERVICE MATRIX

LHCD	0.706	0.706	-0.01
SSGY	-0.714	0.698	-0.011
SNHJ	0.259	0.964	-0.014
XXYL	-0.962	-0.264	0.003
JCSS	0.533	0.503	0.185
YLSB	-0.264	0.963	-0.015
YFSY	0.967	-0.247	0.005
KFHL	-0.259	-0.964	0.014
GZXL	-0.714	0.698	-0.011
YYWS	-0.962	-0.264	0.003
YSBH	-0.959	-0.25	0.001
FWZZ	0.967	-0.247	0.005
CZZJ	0.259	0.964	-0.014
ZYSZ	0.259	0.964	-0.014
YHJY	0.962	0.264	-0.003
NXDD	0.086	0.984	0.003
JJXQ	0.945	0.268	0.05
GTHD	0.666	-0.683	0.111
XLJK	-0.699	0.641	0.133
TSHL	-0.179	-0.008	0.975
FHKW	0.903	-0.266	0.04
GJGZ	-0.930	0.25	-0.015

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