

Short Research Article

**Applying Two-Dimensional Quality Model for
Identifying Critical Factors of Service Quality: A
Case Study on Traditional Chinese Medicine
Clinic in Taiwan**

ABSTRACT

Objective: The traditional Chinese medicine hospitals are small National Health Insurance clinic and the private clinic in Taiwan. It is impossible to know whether patients will satisfy to medical service quality. Therefore, how to help these clinics to improve medicine service quality and satisfaction of healing efficacy becomes an important issue for enhancement operating performance in the traditional Chinese medicine clinic.

Methods: This study designed a questionnaire by applied Kano two-dimensional quality model to investigate the quality attributes of the TCM clinic and medical service quality to increase the patients' satisfaction. Data was gathering using a questionnaire. The questionnaire design for the TCM clinic medical services process including pre-treatment (structure), treatment period (process), and post-treatment (outcome).

Results: Using the New Taipei City as example collects data and statistical analysis. Finding patients pays attention to medical service quality items, which classifies by attraction quality, one-dimensional quality, must be quality, indifferent quality. The 25 factors of TCM clinic medical service quality have two factors of medical service quality that they classified as attractive qualities.

Conclusion: The two attractive qualities were 「The clinic nearby transportation is convenient」 and 「If patients wait too long, the clinic provides drinking water, books, newspapers and watching television service」. If the TCM clinic wants to attract more treatment of patients, the two factors of attractive quality need to strengthen with providing similar services to do improvement goals in the future that operating performance will improve.

Keywords: Kano model, Questionnaires, Statistical analysis, New Taipei city

1. INTRODUCTION

In recent years the United States, Canada, Europe, Southeast Asia and other countries for acceptance treatment of TCM is increases gradually. For example, acupuncture, tuina, qigong, Chinese herbs and other. Conversely, The TCM has opposition voice in Taiwan. For example, the entrance school quota of traditional Chinese medical education was reduced and canceled Post-baccalaureate TCM. In assuring quality case of the TCM outpatient care global budget payment system of the National Health Insurance was established review global budget payment of medical service quality indicators [1]. The Chinese Acupuncture disposal monitoring number of times programs that per month cannot more than 15 times. But the TCM thinking was deeply rooted, Taiwanese like tuina, eating Chinese herbs to help body health. In recent years focusing on health care, so most people prefer TCM treatment.

In 2009, according to the National Health Insurance Administration of Ministry of Health and Welfare shows National Health Insurance statistics data. From 2005 to 2010, the satisfaction of TCM service attitude quality for patients had a downward trend in recent years. In the recent, the doctor-patient relationship was emphasized. The medical service quality and medical safety were required for patients. The large scale western hospitals have adopted the ISO international quality management system certification, and Standard Operation Procedures (SOP) of medicine service quality, but general TCM hospitals are small National Health Insurance clinic and private clinic in Taiwan. These hospitals would like to get quality management system certification and undertake satisfaction survey and data analysis without the massive financial resources and human resources. It is impossible to know whether patients will satisfy to TCM service quality and healing efficacy.

The research results will provide reference for the TCM doctors and clinics to help these clinics improvement TCM service quality and satisfaction of healing efficacy in the future. This study will explore what the patient's demand for the TCM service quality and rehabilitation efficacy Satisfaction by application of Kano two-dimensional quality model.

2. METHODOLOGY

This study based on Donabedian's structure, process and outcome dimension [2,3] by application the Kano two-dimensional quality model research the quality attributes of the TCM clinic medical service quality. This study summarizes the patients requiring service quality items during the TCM clinic medical services process by the literature analysis and discussion with clinic physician. The questionnaire design applies Kano two-dimensional quality model and undertakes the survey for the TCM clinic medical services process including pre-treatment (structure), treatment period (process), and post-treatment (outcome). The questionnaire is random sampling via the TCM clinic patients filling out the questionnaire of the Xinzhuang Dist., New Taipei City, Taiwan (R.O.C.). The survey researchers were thinking of patients to the TCM clinic medical service quality attributes.

After the valid questionnaires have been got, the elements of the TCM clinic medical service quality were classified and found patients pays attention to medical service quality items, including attraction quality(A), one-dimensional quality(O), must-be quality(M), and indifferent quality(I).

The Questionnaire design for the elements of 「Medical Service Quality of Traditional Chinese Medicine Clinic」 refers the relevant literature and researcher seeing the doctor experience as well as discussion with the attending physician [4-7]. The questionnaire was divided into three parts as follows:

61 (1) General information

62 It has patients' general information, for example, gender, age, marital status, education, occupation,
63 monthly income and Current residence.

64 (2) Synthesis assessment

65 It has medical treatment status of patients, for example, (1) Self-health status of patient, (2) Do
66 patients often see TCM or western medicine, (3) How often do patients see TCM, (4) What reason do
67 patients come clinic for treatment? (5) What illness do patients see TCM, healing efficacy of patients,
68 (6) How long do patients recover from the illness.

69 (3) Kano two-dimensional quality attributes survey

70 The problem of the questionnaire was divided into active and negative sides by application Kano two-
71 dimensional quality questionnaire mode. Using the five quality elements of Kano model and two-
72 dimensional model questionnaire mode design the questionnaire [8]. The questionnaire has five
73 options, for example: like, must be, neutral, live with, and dislike.

74 3. ANALYSIS RESULTS AND DISCUSSION

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76 The object of study for 31 patients of the Xinzhuang Dist., New Taipei City, Taiwan (R.O.C.) TCM
77 clinic was collected data. The first part analyses to patient's general information, for example: gender,
78 age, marital status, education, occupation, monthly income, current residence. The results are shown
79 in Table 1. The Table 1 shows the patient gender is mainly based on female(54.84%); the age is
80 mainly based on 「30-39 years」 (38.71%); next is 「40-49」 (35.48%); the marital status is mainly
81 based on 「married」 (64.52%); the education is mainly based on 「university」 (35.48%); next is
82 「Institute of technology」 (32.26%); the occupation is mainly based on 「In Business」 (32.26%); the
83 monthly income is mainly based on 「40,001-50,000」 (29.03%); next is 「30,001-40,000」 (22.58%);
84 the current residence is mainly based on 「New Taipei City」 (90.32%).
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86 **Table 1. General Information Analysis for patients**

Patients Background	General information	Number of people	Percent %
Gender	Male	14	45.16%
	Female	17	54.84%
Age	Under 20	0	0.00%
	20-29	4	12.90%
	30-39	12	38.71%
	40-49	11	35.48%
	50-59	4	12.90%
	60 or above	0	0.00%
Marital status	Single	10	32.26%
	Married	20	64.52%
	Others	1	3.23%
Education	Elementary school	0	0.00%
	Junior high school	0	0.00%
	Senior high school	6	19.35%
	Institute of technology	10	32.26%
	University	11	35.48%
	Graduate school	4	12.90%
Occupation	Farmer	0	0.00%

	Worker	6	19.35%
	In Business	10	32.26%
	Government departments	2	6.45%
	Service industries	4	12.90%
	Student	2	6.45%
	Others	7	22.58%
Monthly income	Less than 20,000 NTD	4	12.90%
	20,001- 30,000 NTD	5	16.13%
	30,001- 40,000 NTD	7	22.58%
	40,001- 50,000 NTD	9	29.03%
	50,001- 60,000 NTD	2	6.45%
	More than 60,001 NTD	4	12.90%
Current residence	Taipei City	3	9.68%
	New Taipei City	28	90.32%
	Taoyuan County	0	0.00%
	Others	0	0.00%

The second part analyses to summative assessment, for example: Self-health status of patient, Do patients often see TCM or western medicine, How often do patients see TCM, What reason do patients come clinic for treatment? What illness do patients see TCM, Healing efficacy of patients, How long do patients recover from the illness? The results are shown in Table 2.

Table 2. Synthesis assessment Analysis

Synthesis assessment	options	Number of people	Percent %
Self-health status	Great	1	3.23%
	Good	8	25.81%
	So-so	20	64.52%
	Not good	2	6.45%
	Very bad	0	0.00%
Do You often see TCM or western medicine?	TCM	14	45.16%
	Western medicine	2	6.45%
	Both TCM and western medicine	15	48.39%
How often do you see TCM?	3-7 day	11	35.48%
	2 week	5	16.13%
	3 week	3	9.68%
	1-2 months	5	16.13%
	More than 3 months	7	22.58%
What reason will you come clinic for treatment? (multiple choices)	Good service attitude	11	
	Close to home	13	
	Waiting time is short	0	
	Well-known doctor	4	
	Recommended by relatives and friends	12	
	I have been here. It works for me	14	

What illness will you see TCM? (multiple choices)	Others	4	
	Circulatory system	1	
	Digestive system	8	
	Respiratory system	8	
	Locomotion system	4	
	Endocrine system	0	
	Reproductive system	2	
	Urinary system	0	
	Immune system	0	
	Nervous system	6	
	Skin system	4	
	Health-preserving and adjustment physique	7	
	Tuina and rehabilitation	2	
	Chinese medicine diet	0	
	Others	0	
healing efficacy	Great	6	19.35%
	Good	17	54.84%
	So-so	7	22.58%
	Not good	0	0.00%
	Very bad	1	3.23%
How long do you recover from the illness?	3-7 day	7	22.58%
	2 week	6	19.35%
	3 week	3	9.68%
	1-2 months	5	16.13%
	More than 3 months	10	32.26%

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The table 2 shows self-health status is mainly based on 「So-so」 (64.52%); Do patients often see TCM or western medicine? Is mainly based on 「Both TCM and western medicine」 (48.39%), next is 「TCM」 (45.16%); How often do patients see TCM? Is mainly based on 「3-7 days」 (35.48%); What reason do patients come clinic for treatment? Is mainly based on 「I have been here. It works for me」 (14 people), secondly is 「Close to home」 (13 people), thirdly is 「Recommended by relatives and friends」 (12 people), next is 「Good service attitude」 (11 people); What illness do patients see TCM? Is mainly based on 「Digestive system」 and 「Respiratory system」 (both there are 8 people), secondly is 「Health-preserving and adjustment physique」 (7 people), next is 「Nerve system」 (6 people); Healing efficacy of patients is mainly based on 「good」 (54.84%); How long do patients recover from the illness? Is mainly based on 「More than three months」 (32.26%). The third part for patients to the view of medical service quality of TCM clinic applies Kano two-dimensional quality attributes and undertakes a statistical analysis as well as classification. The final results are as follows:

(1) Attractive Quality, 「A」

The 25 elements of TCM clinic medical service quality have two elements of medical service quality that they are classified as attractive qualities. The two elements of attractive qualities have 「The clinic nearby transportation is convenient」, 「If patients wait too long, the clinic provides drinking water, books, newspapers and watching television service」.

(2) One-Dimensional Quality, 「O」

The 25 elements of TCM clinic medical service quality have 23 elements of medical service quality that they are classified as one-dimensional qualities. The 23 elements of one-dimensional qualities have 「The clinic environmental is neat, and the clinic nameplate is clear」, 「The clinic has entirely medical facilities, such as beds, heat pack, infrared lamp, and transcutaneous electrical nerve stimulator」, 「Charge speed of making a reservation is quickly and receptionists have good service attitude」, 「Clinics protect patient data and privacy confidentiality」, 「The medical professional has groomed and well-dressed」, 「Clinic will notice treatment time to patients」, 「Medical equipment, and medical professional arrangement have communication and coordination during the treatment process」, 「A doctors have the patients during the treatment process」, 「A doctor express concern and cure patients very quickly」, 「A doctor answer questions and doubts in detail」, 「A doctor chose right treatment strategies and position of the body」, 「A doctor explains how to take medicine in detail」, 「A doctor provide accurate treatment time and the number of acupuncture and moxibustion for patients」, 「A doctor has professional skills, abundant experiences, and great virtue」, 「Patients feel safe when doctors implement acupuncture and moxibustion treatment」, 「When patients complain, a doctor has to handle in the treatment process」 properly, 「A doctor has individual attention to the specific needs of patients during the treatment process」, 「During the treatment process, the medical professional, will attend to patient discomfort『acupuncture and moxibustion produces discomfort』」, 「The medical professional has an excellent service attitude, courtesy, and care of patients」, 「End of treatment, the medical professional will noticed again attention items and follow-up appointment to patients」, 「When patients receive medicine, the medical professional will remind number of taking medication, time of taking medication and food knowledge of TCM」, 「Patients feel good progress after treatment」, 「The Chinese material powder and soup have a good effect」.

145 (3) Must-be Quality, 「M」

146 None of elements of TCM clinic medical service quality were classified as must-be quality.

147 (4) Indifferent Quality, 「I」

148 None of elements of TCM clinic medical service quality was classified as indifferent quality.

149 4. CONCLUSION

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151 By the above analysis the TCM clinic treatment of patients, the attractive quality is main reason of
152 patients choosing the TCM clinic treatment, Patients consider element of medical service quality
153 during treatment is whether the 「The clinic nearby transportation is convenient」. Such as walking
154 or riding a bike can reach the TCM clinic, there are MRT stations and bus stops in the TCM clinic
155 outside or nearby, cars and motorcycles can be parked factors etc. that patients can choose the TCM
156 clinic opportunity to improve. Thus, the second part in Table 1, the synthesis assessment analysis
157 「What reason will you come clinic for treatment?」 is quite consistent. Including second is 「Close
158 to home」 (13 people) and the general information analysis of the first part for patients that current
159 residence 「New Taipei City」 (28 people, 90.32 %). These findings point relatively few of treatment
160 patients from other cities. Because uncomfortable or stroke, physical handicap and other factors need
161 immediate treatment for most of the patient's body. They cannot spend too long time enduring traffic
162 of across cities and inconvenient to transfer. Moreover, it seems that most of the patients are
163 preference to choose 「Close to home」 and 「The clinic nearby transportation is convenient」 of
164 clinics for residence in New Taipei City, because it can help quickly and save time to treatment. This
165 clinic is located in Xinzhuang Dist Center., New Taipei City, Taiwan (R.O.C.). The TCM clinic nearby
166 transportation is convenient that it has bus stops, MRT, and the district office to provide the free bus.
167 Outside the TCM clinic can be easily parked bicycles and motorcycles that the TCM clinic nearby has
168 parking spaces, parking spaces for scooters, parking tower, and car parks of Xinzhuang Sports Park.
169 This factor makes patients to choose the TCM clinic treatment opportunity to improve.

170 On the other hand, 「If patients wait too long, the clinic provides drinking water, books, newspapers
171 and watching television service」 of medical service quality element. Maybe most of the patients feel
172 waiting too long. In the event that the TCM clinic provides drinking tea, water, books, newspapers,
173 comics, and watching television in software as well as hardware service to skim over with read for
174 patients. Thus, patients have more patience waiting for treatment and reducing unhappy mood that
175 the patients get appeasing. This factor makes patients to choose the TCM clinic treatment opportunity
176 to improve.

177 Therefore, these elements of medical service quality will exceed expectations feeling for patients. Let
178 patients have satisfaction of intrinsic or extra surprise feeling. Conversely, not to have these elements
179 of medical service quality that patients will not have dissatisfied or disappointment feeling on intrinsic.
180 If the TCM clinic wants to attract more treatment of patients, the two elements of attractive quality
181 need to strengthen with provide similar services to do improvement goals in the future that operating
182 performance will improve.

183 The one-dimensional quality part, when the 23 elements of TCM clinic medical service quality are
184 sufficient service that it will be better for satisfaction of patient's experience. So, satisfaction of
185 patients with these elements of TCM clinic medical service quality is a direct ratio relationship. When
186 these elements of TCM clinic medical service quality are more sufficient, it will be higher for
187 satisfaction of patients experience and making patients to feel gladder. Conversely, when these
188 elements of TCM clinic medical service quality are insufficient that it will be lower for satisfaction of

189 patients experience and making patients more disappointed. The factors are that main reason of
190 patients without choosing to treatment next time for the TCM clinic.

191 Finally, the 23 elements of medical service quality will be included in the necessary medical service
192 items and conditions for the TCM clinic continuity providing as well as improving the quality of medical
193 service in the TCM medical service process, it will make the patients follow-up rates to increase. Thus,
194 the second part in Table 2 indicate, synthesis assessment analysis of 「What reason will you come
195 clinic for treatment?」 included 「I have been here. It works for me」 (14 people), 「Recommended
196 by relatives and friends」 (12 people), 「Good service attitude」 (11 people) will continue maintaining
197 as well as promoting follow-up rates of patients. It will help patients recommend by relatives and
198 friends to treatment probability with frequency may be higher for the TCM clinic.

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