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Medical service quality, psychological contract, and patient loyalty

An empirical study among patients in China

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Abstract

The purpose of this study is to examine the mediating effect of psychological contracts (including relational and transactional psychological contracts) on the relationship between medical service quality and patient loyalty.

A cross-sectional survey was conducted between September and December 2017. Questionnaires assessing medical service quality, the psychological contract, and patient loyalty were distributed to a random sample of 600 patients across 6 hospitals. The final sample consisted of 469 participants. Hierarchical regression analyses were conducted to examine the mediating effect of psychological contracts on the relationship between medical service quality and patient loyalty.

The mean scores of medical service quality, psychological contracts, and patient loyalty were 3.497 ± 0.571, 3.699 ± 0.503, and 3.342 ± 0.724, respectively. Medical service quality is positively related to psychological contract ($\beta = 0.612$, 95% confidence interval [CI] = 0.476–0.603) and patient loyalty ($\beta = 0.676$, 95% CI = 0.773–0.944). Further, psychological contract is positively related to patient loyalty ($\beta = 0.599$, 95% CI = 0.757–0.968). Both relational psychological contract and transactional psychological contract mediate the relationship between medical service quality and patient loyalty.

Our findings reveal that medical service quality is associated with patient loyalty and that this association is mediated by relational and transactional psychological contracts. Therefore, in order to improve patient loyalty, psychological contracts should be reinforced, and medical service quality should be improved.

Abbreviation: SERVQUAL = service quality.

Keywords: mediating effect, medical service quality, patient loyalty, psychological contract

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1. Introduction

Between 2000 and 2017, the Chinese government's health expenditure had increased from CNY70.9 billion to CNY155.73 billion, and the number of medical personnel had also increased from 4.491 million to 8.988 million. However, patients still consider the quality of medical services to be unsatisfactory[1] – this dissatisfaction can strain the relationship between doctors and patients in China.[2] Between 2000 and 2015, health expenditure (ie, percentage of the global gross domestic product) increased from 5.4% to 6.3% globally. Correspondingly, there was an increase in research on areas related to healthcare during this time period.[3] There has been a growing interest in measuring and improving the quality of medical services, and exploring the influence of medical service quality on factors such as patients' attitudes and behaviors. In this regard, one of the most popular methods concerns the service quality (SERVQUAL) model. In past studies, SERVQUAL model has always been used to conceptualize and measure medical service quality in accordance with the expectancy-disconfirmation paradigm.[4–7] However, this model has some limitations – in particular, it does not delineate the aspects of medical service quality and the specific parties that are responsible for negative outcomes and subsequent rectification.[3,4] Therefore, in this study, specific aspects of medical service quality are measured to overcome the shortcomings of the SERVQUAL model, underscoring the importance of patient-centered service.

Service quality is the principal factor that has an impact on consumers' purchase intentions.[8] Since patients are consumers

who receive medical services, they make choices based on their perception of the quality of medical services. Some researchers have found that there is a relationship between medical service quality and patient loyalty; however, most of these researchers tend to treat customer satisfaction as a mediating variable.[9–11] The mechanisms that underline how customer loyalty operates within the healthcare industry have not been adequately delineated.[12]

The term "psychological contract" originally referred to the relationship between the employees and their organizations.[13] Viewed through this lens, customer management is a construct that is comparable to employee management.[14] Psychological contracts (including relational and transactional psychological contracts) have always been regarded as important variables within the field of human resource management and organizational behavior,[15,16] but Roehling research[17] suggests that psychological contracts are shared not only between employees and organizations, but also between consultants and their guests, landlords and their tenants, and clients and their merchants. Within the context of organizational behavior and human resource management, the parties to a psychological contract are employees and their employers. In contrast, within the context of marketing, the contracting parties are customers and service organizations.[18] Since only a few articles have underscored the importance of psychological contracts to the field of marketing,[18,19] research on psychological contracts within the domain of healthcare service marketing has been quite limited. Therefore, this study aims to examine the mediating effects of relational and transactional psychological contracts on the relationship between medical service quality and patient loyalty among Chinese residents.

2. Methods

2.1. Ethics

This study was approved by the ethics committee of the Huazhong University of Science and Technology. Ethical issues were taken into consideration when the project was designed. All the participants provided written informed consent. Participants' information was kept anonymous.

2.2. Study design and sample

A cross-sectional survey was conducted between September and December of 2017 in Wuhan, China. Stratified random sampling was applied. Six hospitals consisting of 2 large general hospitals (>500 beds), 2 medium-sized hospitals (100 ≤ beds ≤ 500), and 2 small hospitals (<100 beds) were randomly selected. The survey respondents were patients who were receiving, or had received, medical services from the hospitals randomly selected. All respondents were provided with printed information about the study, and their written informed consent was obtained before their participation in the survey. The participants were randomly selected and asked to complete questionnaires based on their most recent experience of receiving medical services. In each hospital, 100 questionnaires were distributed. A total of 600 patients participated in face-to-face surveys, which were conducted with the assistance of trained investigators. A total of 548 participants responded to the survey. The use of face-to-face surveys allowed surveyors to provide explanations about the survey items. This feature can help respondents to complete the questionnaires – particularly for those respondents who have reading or hearing disabilities, older adults, or individuals with lower education levels. Questionnaires with missing or invalid responses were excluded. Finally, the responses of 469 participants were analyzed. Table 1 shows the composition of the final sample.

Table 1

Demographic characteristics of sample participants.

Variables	Attribute	Frequency	Percentage (%)
Gender	Male	197	42.0
	Female	272	58.0
Marital status	Unmarried	372	79.3
	Married	97	20.7
Age	≤20	19	4.1
	21–40	383	81.7
	41–60	31	6.6
	≥61	36	7.6
Average monthly income	≤¥2000	139	29.6
	¥2001–5000	164	35.0
	¥5001–10000	125	26.7
	≥¥10001	41	8.7
Academic background	primary school	16	3.4
	High school	48	10.2
	Bachelor's degree	255	54.4
	Master's degree or Doctor's degree	150	32.0

2.3. Measures

2.3.1. Medical service quality. Medical service quality was measured using Chen and Yan's 24 item scale,[20] which is composed of 5 dimensions: medical doctor (4 items), nursing care (6 items), management capacity (4 items), service procedure (4 items), and facilities and environment (5 items). Respondents were required to indicate their degree of agreement with each item on a 5-point Likert scale (where 1 = strongly disagree, 5 = strongly agree). The following are a few sample items: "The physicians possess sufficient professional knowledge;" "The nurses provided clear and sufficient explanations about my symptoms and treatment plans;" "The hospital is well-equipped with amenities;" "The hospital is clean and pleasant;" and "It was easy to book appointments." In the present study, the Cronbach alpha for the total scale is 0.948, whereas the corresponding Cronbach alpha measures of the 5 subscales are 0.848, 0.846, 0.808, 0.785, and 0.866, respectively.

2.3.2. Psychological contract. The psychological contract was measured using Yang's 9-item scale,[21] which consists of 2 dimensions: the relational (5 items) and transactional (4 items) psychological contract. The respondents were required to indicate their degree of agreement on a 5-point Likert scale (where 1 = strongly disagree, 5 = strongly agree). The following are a few sample items: "I will cooperate with the treatment and act in accordance with the expectations of the medical staff;" "I will inform others to this hospital's medical services;" "I am willing to communicate with the medical staff"; and "I will consciously comply with the rules of the hospital." In the present study, Cronbach alpha measures of the total scale and 2 subscales are 0.822, 0.794, and 0.712, respectively.

2.3.3. Patient loyalty. Patient loyalty was measured using Feng and Duan 4-item scale.[22] The following are a few sample items:

Table 2

Means, standard deviations, and correlations among variables.

	1	2	3	4	5	6	7	8	9	10
1 Medical service quality	1									
2 Medical doctor	.838‡	1								
3 Nursing care	.890‡	.737‡	1	.						
4 Facilities and environment	.859‡	.636‡	.680‡	1						
5 Management capacity	.852‡	.606‡	.666‡	.735‡	1					
6 Service procedure	.841‡	.643‡	.648‡	.635‡	.685‡	1				
7 Psychological contract	.615‡	.595‡	.525‡	.506‡	.530‡	.496‡	1			
8 Transactional psychological contract	.502‡	.493‡	.422‡	.427‡	.454‡	.376‡	.861‡	1		
9 Relational psychological contract	.582‡	.558‡	.503‡	.469‡	.485‡	.493‡	.910‡	.574‡	1	
10 Patient loyalty	.675‡	.675‡	.608‡	.538‡	.540‡	.540***	.599‡	.498‡	.559	1
M	3.497	3.448	3.345	3.649	3.589	3.493	3.699	3.902	3.537	3.342
SD	0.571	0.663	0.693	0.638	0.686	0.646	0.503	0.569	0.563	0.724

*$P \leq .05$.
†$P \leq .01$.
‡($P < .001$), including the correlation of 9 and 10 (0.559).

"If I need to go to a hospital, this hospital will be my first choice;" "I will recommend this hospital to those who need medical services;" and "I will provide a positive evaluation of this hospital." The respondents were required to indicate their degree of agreement on a 5-point Likert scale (where 1 = strongly disagree, 5 = strongly agree). Higher scores are indicative of greater loyalty. In the present study, the Cronbach alpha coefficient concerning this scale is 0.874.

2.3.4. Control variables. Participants' demographic characteristics – namely, their gender, age, academic background, and income – served as the control variables. These variables were coded accordingly. For example, with regard to gender, "male" and "female" were assigned the codes of 0 and 1, respectively. Similarly, 1, 2, 3, and 4 represented "primary school," "high school," "bachelor's degree," and "master's or doctoral degree," respectively.

2.4. Statistical analysis

All analyses were conducted using Microsoft Excel 2007 and SPSS 20.0. Descriptive statistics were computed to examine the participants' characteristics, with Pearson correlation analysis used to examine the relationships between the different variables. Hierarchical regression analysis was employed to examine the relationship between medical service quality and patient loyalty. Mediation analysis was also conducted to examine the extent to which the psychological contract mediated the relationship between medical service quality and patient loyalty. The significance level of our analysis was specified as $P < .05$.

3. Results

3.1. Common method biases

Common method variance – which is one of the main sources of measurement error – is a potential problem in behavioral research which can threaten the validity of the findings of a study. Harman single-factor test was conducted so as to address the issue of common method variance.[23] The results shows that the resulting factor explains 32.188% of the variance; this indicates an absence of common method bias.

3.2. Correlation analysis

Correlation analysis was conducted with gender, age, educational level, and income as the control variables. The results show that medical service quality is significantly, and positively, related to the psychological contract ($r = 0.615$, $P \leq .001$) and patient loyalty ($r = 0.675$, $P \leq .001$) and that the psychological contract is also significantly, and positively, related to patient loyalty ($r = 0.599$, $P \leq .001$) (Table 2).

3.3. Regression analysis

To further examine the emergent relationships, mediation analysis was conducted in accordance with the procedure outlined by Baron and Kenny.[24] In model 4, medical service quality, along with the control variables, were entered; the resulting outcome shows that the medical service quality is positively related to patient loyalty ($\beta = 0.676$, $P \leq .001$). In model 5, 5 latent factors of medical service quality, along with the control variables, were entered. The results show that the considerations surrounding the medical doctor ($\beta = 0.492$, $P \leq .001$), nursing care ($\beta = 0.145$, $P \leq .01$), facilities and environment ($\beta = 0.370$, $P \leq .001$), and management capacity ($\beta = 0.123$, $P \leq .01$) are positively related to patient loyalty. The results of models 1 and 6 show that medical service quality s positively related to psychological contract ($\beta = 0.612$, $P \leq .001$), and that psychological contract is positively related to patient loyalty ($\beta = 0.599$, $P \leq .001$). The results of models 1, 2, and 3 further show that medical service quality is positively related to the psychological contract, including relational and transactional psychological contracts. Medical service quality and the psychological contract (including the relational and transactional psychological contracts) were simultaneously entered as predictors into the regression model in order to test the mediating effect of psychological contract. The results of models 7, 8, and 9 indicate that medical service quality and the psychological contract ($\beta = 0.495$, $P \leq .001$; $\beta = 0.296$, $P \leq .001$) are positively related to patient loyalty. Furthermore, medical service quality and the relational psychological contract ($\beta = 0.530$, $P \leq .001$; $\beta = 0.252$, $P \leq .001$) are positively related to patient loyalty. Moreover, medical service quality and the transactional psychological contract ($\beta = 0.569$, $P \leq .001$; $\beta = 0.215$, $P \leq .001$) are positively related to patient loyalty. These results

Table 3

Results of regression analyses.

	Psychological contract	Relational psychological contract	Transactional psychological contract	Patient loyalty						
	M1	M2	M3	M4	M5	M6	M7	M8	M9	
Gender	0.002 (−0.073, 0.075)	−0.001 (−0.087, 0.084)	0.005 (−0.088, 0.097)	−0.019 (−0.128, 0.072)	0.002 (−0.098, 0.099)	0.001 (−0.106, 0.111)	−0.019 (−0.123, 0.067)	−0.018 (−0.123, 0.070)	−0.019 (−0.125, 0.069)	
Age	0.056 (−0.015, 0.107)	0.090* (0.012, 0.153)	0.000 (−0.076, 0.075)	0.011 (0.069, 0.096)	0.017 (−0.062, 0.097)	−0.001 (−0.091, 0.088)	−0.005 (−0.084, 0.072)	−0.011 (−0.093, 0.060)	0.012 (−0.066, 0.093)	
Education	0.040 (−0.022, 0.074)	0.013 (−0.045, 0.065)	0.063 (−0.013, 0.106)	0.050 (−0.017, 0.112)	0.040 (−0.023, 0.103)	0.038 (−0.035, 0.166)	0.038 (−0.025, 0.097)	0.047 (−0.018, 0.106)	0.036 (−0.028, 0.097)	
Income	−0.023 (−0.049, 0.026)	−0.033 (−0.062, 0.024)	−0.004 (−0.051, 0.044)	−0.060 (−0.094, 0.007)	−0.042 (−0.079, 0.019)	−0.030 (−0.076, 0.033)	−0.054 (−0.087, 0.009)	−0.052 (−0.086, 0.011)	−0.025 (−0.092, 0.006)	
Service quality	0.612‡ (0.476, 0.603)	0.578‡ (0.498, 0.645)	0.501‡ (0.421, 0.579)	0.676‡ (0.773, 0.944)			0.495‡ (0.526, 0.732)	0.530‡ (0.572, 0.775)	0.569‡ (0.626, 0.818)	
Medical doctor				0.492‡ (0.371, 0.594)						
Nursing care				0.145† (0.047, 0.272)						
Facilities and environment				0.370‡ (0.288, 0.350)						
Management capacity				0.123† (0.020, 0.228)						
Service procedure				0.077 (−0.025, 0.199)						
Psychological contract						0.599‡ (0.757, 0.968)	0.296‡ (0.309, 0.543)			
Relational psychological contract								0.252‡ (0.221, 0.427)		
Transactional psychological contract									0.215‡(0.177,0.369)	
R^2	0.383	0.348	0.256	0.459	0.498	0.362	0.514	0.501	0.494	
$\triangle R^2$	0.376	0.341	0.248	0.454	0.489	0.355	0.507	0.495	0.487	
F	57.501‡	49.475‡	31.886‡	78.812‡	57.050‡	52.627‡	81.358‡	77.356‡	75.176‡	

* $P \leq .05$.
† $P \leq .01$.
‡ $P \leq .001$.

indicate that relational and transactional psychological contracts mediate the relationship between medical service quality and patient loyalty (Table 3).

4. Discussion

The study investigates the relationship between medical service quality and patient loyalty with a sample of Chinese patients. The results show that there is a positive relationship between medical service quality and patient loyalty. Furthermore, psychological contracts (including relational and transactional psychological contracts) mediate the relationship between medical service quality and patient loyalty.

Gender, age, education level, and income do not have a significant direct effect on patient loyalty, and this finding is consistent with past findings.[12] Among the 5 dimensions of medical service quality that were examined, the highest mean was obtained for the category concerning facilities and environment. In contrast, the means of nursing care and medical doctor were relatively low. This indicates that patients are satisfied with the extent to which hospitals in China are equipped with advanced medical devices, but that they also believe that the medical care provided by doctors and nurses should be improved upon. This finding explains the disputes that frequently occur between patients and doctors in China. Therefore, the act of increasing doctors' and nurses' overall professional abilities will play a crucial role in improving patients' perceptions of health services.

Medical service quality has a direct positive effect on patient loyalty, and this finding is consistent with past observations.[3,12] High-quality medical services can satisfy various patient needs and, consequently, lead to recurrent purchase behaviors.[25] Furthermore, good medical services reinforce patients' trust in diagnoses and provide them with a sense of psychological safety.[26] An improved sense of psychological safety may also foster patient loyalty.

Previous studies on service quality and customer loyalty have mostly treated satisfaction as the mediating variable.[9,10] In this study, we found that the psychological contract, including the relational and transactional psychological contracts, mediated the relationship between medical service quality and patient loyalty. People will eventually reciprocate to individuals or organizations that benefit them.[27] Psychological contracts are created after customers interact with their service providers. An evaluation of the relationship between customers and service providers will, thus, influence their attitudes and behaviors and, consequently, increase or decrease loyalty.

4.1. Theoretical implications

The present findings make significant theoretical contributions to the literature in at least 3 ways. First, the results further the understanding of medical service quality because the relationships between its latent factors, the psychological contract, and patient loyalty were examined within the framework of social exchange. Previous studies on the quality of medical services have focused on obvious correlates, such as satisfaction and behavioral intention.[27,28] Although psychological contract and patient loyalty cannot be easily measured, they play an important role in organizational development.[12] In addition, psychological contracts have received limited attention from the fields of marketing and business,[18] and especially from healthcare marketing. Based on the social exchange theory, it can be contended that patient

loyalty is rooted in a patient's evaluations of the relationships that they share with hospitals, which is, to a great extent, determined by their experience of receiving medical services from said hospital. In this study, the constructs of the psychological contract and patient loyalty were reconceptualized in accordance with the nature of healthcare services; this offers a novel approach to research on healthcare marketing.

Second, the present findings advance the knowledge about the influence of specific aspects of medical service quality on patient loyalty. Past studies have always used the SERVQUAL model to evaluate the quality of medical services.[4] However, the SERVQUAL model does not provide information about the specific aspects concerning medical service quality, responsible parties, and subsequent rectifications.[7] The results revealed that 4 of the 5 aspects of medical service quality – service procedure, medical doctor, nursing care, facilities and environment, and management capacity – are positively related to patient loyalty. From the results, medical doctor is the most important factor for patient loyalty.

Third, this study contributes to the existing literature by providing empirical evidence of the mediating effect of psychological contract on the relationship between medical service quality and patient loyalty. Previous studies covering this relationship have regarded satisfaction as a mediating variable.[10,11] The effect of the psychological contract has largely been overlooked, especially within the field of healthcare services. Patients who receive high-quality medical services are likely to develop a reciprocal relationship with their hospitals; this, in turn, may influence their attitudes and behaviors toward the institution. The present findings underscore the important role that psychological contracts play in enhancing patient loyalty.

4.2. Managerial implications

This study uncovers valuable implications. First, the results show that medical service quality has a positive effect on the psychological contract and patient loyalty, thereby indicating that hospitals should transform themselves into consumer-centered institutions and improve the quality of their medical services. Hospitals should provide training to employees – including doctors, nurses, and administrative personnel – so as to improve their medical knowledge and service attitudes, thereby making them better able to fulfill patients' needs. In addition, in order to attract more patients, hospitals should make an effort to improve their facilities and to provide comfortable environments.

Second, the present results suggest that hospitals should make more effort to reinforce patients' psychological contracts. Specifically, hospitals should provide detailed descriptions of their medical services and answer patients' questions patiently. To maintain the psychological contracts, hospitals should pay attention to patients' evaluations of, and feedback about, their medical services, and should also establish emotional connections with their patients. Furthermore, hospitals should aim to develop harmonious long-term relationships with their patients. Post-treatment care and personalized healthcare services may also ensure a long-lasting psychological contract.

Third, the present findings offer a fresh approach which hospital managers can adopt to enhance patient loyalty. The results show that increased quality of received medical services improve patient loyalty by reinforcing their psychological contracts. Hospitals benefit from patient loyalty, because loyal customers have greater purchase intentions and are more likely to repeatedly purchase products of the same brand.[29] In this regard, the present results suggest that practitioners should be cognizant of the importance of developing and maintaining a reciprocal relationships with their patients. Hospital managers should enhance not only the "core" (eg, medical services), but also the "peripheral" (eg, psychological contract, patient loyalty) aspects of their hospitals.

4.3. Limitations and future research

Although the present study makes notable contributions to the literature, it has a few limitations. First, because a cross-sectional design was used, it is impossible to draw conclusions about causal relationships.[30] The results only delineate the direct and indirect influences of medical service quality on the patient loyalty of Chinese residents. Future studies should examine the underlying mechanism by adopting longitudinal or experimental research designs in order to ascertain the causality of the emergent relationships. Second, all the variables were assessed using self-report measures and may have biased the present findings. Third, there are different types of hospitals in China – namely, first-class (primary healthcare institutions), second-class (regional technical centers for medical prevention), third-class (large-scale general hospitals), public, and private hospitals. The functions and standards of these hospitals may be different. Therefore, future studies should examine the relationship between these variables across different types of hospitals and ascertain the medical service quality of first-, second-, and third-class, public, and private hospitals. Fourth, cultural factors are important variables which can influence consumers' attitudes and behaviors. Accordingly, future studies should explore the effects of cultural differences (eg, power distance) and the culture within which medical institutions are situated.

5. Conclusion

The results of this survey, which was conducted among 469 Chinese residents, confirmed that medical service quality is positively related to patient loyalty. This indicates that high-quality medical service can enhance the repeat-purchasing behaviors of patients in China. Aspects of medical service quality – such as the patient's medical doctor, nursing care, and facilities and environment – were positively related to patient loyalty. Furthermore, the psychological contract mediated the relationship between medical service quality and patient loyalty. This finding suggests that patients perceive and evaluate hospitals positively when their unique healthcare needs have been adequately satisfied by hospitals. Consequently, these positive perceptions result in the establishment of harmonious and reciprocal relationships between patients and hospitals and further enhance patient loyalty.

Author contributions

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