

The Impact of Service Attitude of Medical Staff on Patient Satisfaction and the Mediating Effect of Patient Commitment

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Abstract: This study aims to investigate the impact of service attitude of medical staff on patient satisfaction, as well as the mediating role of patient commitment in this relationship. The research was conducted with a sample of 1092 outpatients in Anhui province, China. Data were collected through a questionnaire method between 14 Mar 2024 to 15 Apr 2024. The data analysis employed descriptive statistical methods, exploratory factor analysis, reliability analysis, and the path coefficient method to ascertain the hypotheses. The findings of this study indicate that service attitude significantly influences both patient satisfaction and patient commitment, and patient commitment significantly influences patient satisfaction. Additionally, another key outcome of this research is the identification of a mediating effect of patient commitment on the relationship between service attitude and patient commitment. The findings offer valuable theoretical insights and practical guidance for the development and management of primary medical institutions in China.

Keywords: Primary Medical Institutions; Service Attitude; Patient Commitment; Patient Satisfaction; Mediating Effect.

1. Introduction

On a global scale, the improvement of medical service quality has become one of the important goals of governments and medical institutions in various countries [1]. Patient satisfaction not only reflects the quality of medical services, but also directly affects patients' medical experience and subsequent health management. Therefore, it is of great significance to study the factors that affect patient satisfaction, especially in primary medical institutions, for improving the quality of medical services.

As an important part of China's medical service system, primary medical institutions shoulder the heavy responsibility of providing basic medical services for the broad masses of the people. However, due to the influence of many factors, such as resource allocation, medical staff quality and service consciousness, the performance of primary medical institutions in service attitude is often concerned by patients. The service attitude of medical staff is widely regarded as an important factor affecting patients' satisfaction. A good service attitude can enhance patients' trust in medical services and thus improve their satisfaction[2].

At the same time, the concept of patient commitment has gradually attracted attention. Patient commitment is not only the performance of patients' trust in treatment and medical staff, but also the degree of patients' active participation and cooperation in the process of seeking medical treatment[3]. Research showed that patient commitment may play an mediating role in the formation of patient satisfaction, That is, the service attitude of medical staff further affected patients' satisfaction by affecting their commitment. Therefore, exploring the relationship between medical staff's service attitude, patient commitment and patient satisfaction can help us better understand and improve the quality of primary medical services.

The purpose of this study is to deeply explore this

relationship and analyze the influence mechanism of medical staff's service attitude on patient satisfaction in primary medical institutions in China, especially the mediating role of patient commitment. Through investigation and data analysis, it is expected to provide scientific basis and reference suggestions for improving the service quality of primary medical institutions, so as to better meet the needs of patients and improve the overall medical service level.

2. Literature Review and Research Hypotheses

Robbins believed that attitude was mainly composed of three parts, namely, cognitive component, emotional component and behavioral component [4]. Cognition is a description and view of things, emotion is the mood and feeling in attitude, and behavior refers to the individual's intention to act on someone or something in some way. According to the purpose of this study, service attitude refers to the attitude of medical staff in terms of words and deeds in the process of serving patients. Service attitude is often reflected in the service process, which is the basis of reflecting service quality. High-quality service begins with excellent service attitude. The service produced by medical institutions is also the establishment of a service relationship between medical staff and patients. A good service attitude would make patients feel intimate, enthusiastic, simple and sincere[5].

The definition of commitment was that a person thought this relationship was very important and worth trying to maintain[6]. In the health care industry, loyal patients not only show a favorable attitude towards service providers, but also show a stable relationship. Satisfied patients show a high commitment to service providers by continuing to use the services provided by service providers and introducing them to others. Therefore, according to the purpose of this study, patient commitment refers to a high degree of trust and

dependence of patients on service providers after seeking medical treatment, and transforms this trust and dependence into friendly behavior towards service providers.

Risser thought that patient satisfaction referred to the degree of consistency between the ideal medical service of patients and the medical service actually felt by patients[7]. Pascore defined patient satisfaction as people's evaluation of medical care services based on the requirements of health, disease and quality of life[8]. Dozier believed that patient satisfaction was a judgment formed by comparing patients' own experiences

with their expectations[9]. Combining the related research at home and abroad and the research in this study, the patient satisfaction in this study is defined as: under the relatively rational cognitive level and environment, people have some expectations for medical services due to the requirements of diseases and prevention, and the evaluation is made after comparing this expectation with their actual feelings during or after receiving medical services. Table1 shows the empirical review of the study.

Table 1. Empirical review

Hypothesis	Findings	Author(s) / Year of Publication, Country
Relationship between service attitude and Patient satisfaction	Patients' satisfaction with doctors meeting their medical needs had the strongest relationship with overall satisfaction, followed by doctors' service attitude, medical expenses, waiting time, prescription and treatment time.	Yu, W., Li, M., Xue, C., Wang, J., Liu, J., Chen, H., & Zhang, L. (2016) [10] China
	Gender, marital status, medical insurance type, medical treatment type, hospital area, cleanliness of medical treatment environment, accuracy of diagnosis results, timeliness of medical staff's response, service level and service attitude of medical staff were positively correlated with patient satisfaction	Wu, D., Zhou, Q., Wu, J. Y., Zhao, R. Q., Zhang, D. Q., Jiang, S. ... & Wang, C. Z.(2023)[11] China
	Communication and attitude, drug supply and pharmacy environment had positive effects on patient satisfaction in community pharmacies, and the effective factor affecting patient satisfaction was drug supply, and patient satisfaction strongly affects patient loyalty in community pharmacies, and it was verified that the research model had good fitting.	Gül, İ., Helvacıoğlu, E. T., & Saraçlı, S. (2023) [2] Turkey
	Doctors' information support, doctors' friendly attitude and doctors' timely reply were the health care factors that affect patient satisfaction. The emotional support of doctors, the number of doctor-patient communication and the average number of words in the doctor's reply box were the incentive factors that affect patient satisfaction, and health care factors had a greater impact on patient satisfaction.	Wu, G. P., Shi, R. L., Zheng, J. N., Zeng, S. J. & Li, M. D. (2023) [12]China
Relationship between service attitude and patient commitment	The higher the absolute value of the correlation coefficient, the stronger the relationship between the variables discussed and the patient's commitment to continue to receive the care of the resident. Some specific behaviors of the doctor would affect the relationship between the doctor and the patient. Patients with higher socio-economic status and higher education level were often more likely to be affected by the doctor's behavior.	DiMatteo et al. (1979) [13] USA
	There was a significant mediating relationship between patients' perceived value of medical services, commitment to the patient provider relationship, and patient loyalty.	Huang, I. C. (2021) [14] China
	The patient's commitment to CR was an intrinsic interest in achieving health, which stemmed from the demand for disease acceptance and treatment. In addition, the rehabilitation team also promoted the purposeful interpersonal relationship between patients and the treatment group. It provided a basis for patients to actively cope with the challenges in the treatment process.	Sanaie et al. (2021) [15] Iran
Relationship between patient commitment and patient satisfaction	Outpatient commitment was associated with regular outpatient service (three or more times a month), and patients who made involuntary outpatient commitment significantly reduced the incidence of violent incidents.	Swanson et al. (2000)[16]USA
	Patient commitment was determined by patient trust, while trust was determined by patient satisfaction.	Torres et al.(2009) [3]Chile
	Patient satisfaction would affect patients' trust and commitment. Another result of this study was that patient trust mediated the influence of patient satisfaction on patient commitment.	Durmuş A, Akbolat M.(2020)[17]Turkey
	Organizational commitment had a significant impact on job satisfaction and performance.	Wayoi et al. (2021)[18] Indonesia
	Service quality was related to patient satisfaction, and patient satisfaction was related to patient commitment.	Olesen, K.,&Bathula, H. (2022) [19]

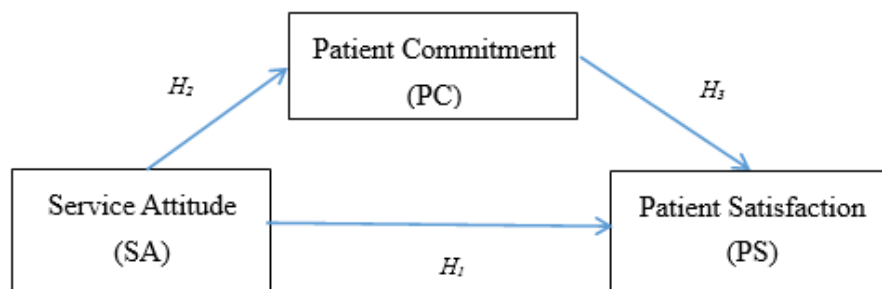


Figure 1. Conceptual model

The following hypotheses were developed based on the conceptual model in Figure 1.

H_1 : Service attitude affects patient satisfaction.

H_2 : Service attitude affects patient commitment.

H_3 : Patient commitment affects patient satisfaction.

H_4 : Patient commitment has a mediating role in the effect

of service attitude on patient satisfaction.

3. Methods

Sample

The population of the study included outpatients from all primary medical institutions in Anhui Province, China, this method involved choosing individuals who are readily available and willing to participate. Multi-stage sampling was used during the sample selection. In this study, data were collected from 1500 outpatients to strengthen the results of the study and improve the representation of the universe, the number of valid questionnaires answered by outpatients is 1092. Data collection from outpatients with the help of the survey investigation was performed between 14 Mar 2024 to 15 Apr 2024. According to our findings obtained from surveys, 45.9% of the respondents were female while 54.1% were male. Other demographic variables are listed in Table 1.

Instruments

The survey questionnaire consisted of two parts. The first part gathered basic information about the respondents, comprising six fundamental questions. The second part included 17 items across three variables: service attitude, patient commitment, and patient satisfaction. Specifically, there were 6 items for service attitude, 6 items for patient commitment, and 5 items for patient satisfaction.

Service attitude scale. The scale was adapted by Zhen [20] is used to measure service attitude in this study. This scale consists of 6 statements like “Medical staff speak to you in a

polite and gentle tone”, “Medical staff patiently listen to your description of your current condition and symptoms”, “Medical staff patiently explain the specific treatment plan for the disease”, “Medical staff explain the usage method and precautions of the medication in detail to you”, “Medical staff actively participated in the free clinic in my community”, “When I need emergency treatment, the medical staff will give me priority”. The statements are grouped under a single dimension at the end of the exploratory factor analysis regarding service attitude. The total explained variance of the scale is 74.3%. The Kaiser-Meyer-Olkin (KMO) value of 0.916 and Bartlett’s test of sphericity are significant. The Cronbach’s alpha value for the scale is 0.927.

Patient commitment Scale. This study utilized the patient commitment Scale developed by Torres [3]. The scale includes questions concerning the commitment of the outpatients, consisting of a single dimension and 6 statements. (eg, I want to keep the relationship with my medical doctor into the future, I am very committed to my current doctor, The relationship I have with my doctor deserves all my effort to keep it, even if I have new alternatives, I would not quit visiting this doctor, If somebody would criticize my doctor, I would emphasize his positive traits, I would not abandon this doctor’s services even though he would make small mistakes). The total explained variance of the scale is 76.1%. The KMO value of 0.922 and Bartlett’s test of sphericity are significant. The Cronbach’s alpha value for the scale is 0.937.

Table 2. Demographic characteristics of respondents

Demographics	Grouping	n (%)
Gender	Female	501 (45.9)
	Male	591 (54.1)
Age	30 and below	365 (33.4)
	31-40	231 (21.2)
	41-50	249 (22.8)
	51-60	131 (12.0)
	61-70	64 (5.9)
	Over 70	52 (4.8)
	Illiterate	53 (4.9)
Educational level	Primary school	97 (8.9)
	Junior high school	216 (19.8)
	High school	117 (10.7)
	Technical secondary school	178 (16.3)
	Bachelor degree	370 (33.9)
	Master degree and above	61 (5.6)
Occupation	Corporate employee	249 (22.8)
	Student	204 (18.7)
	Soldier	4 (0.4)
	Government or public institution employee	157 (14.4)
	Farming	142 (13.0)
	Freelancer	168 (15.4)
	Other	168 (19.4)
Location	Urban	503 (46.1)
	Rural	589 (53.9)
The situation of outpatient visits	First visit	913 (83.6)
	Return visit	179 (16.4)
Service attitude score (6 items)		25.89±4.15
Patient commitment score (6 items)		25.10±5.04
Patient satisfaction score (5 items)		21.51±3.82

Patient satisfaction Scale. The patient satisfaction scale

used in the study was developed by Ji[21]. The scale consists

of 5 statements (eg, in general, I am satisfied with this medical visit, I am willing to recommend medical staff to others, I would definitely choose these medical staff again for my next visit, I think it is wise to choose the medical staff myself, The service provided by the medical staff exceeded my expectations). The total explained variance of the scale is 79.7%. The KMO value of 0.910 and Bartlett's test of sphericity are significant. The Cronbach's alpha value for the scale is 0.936.

The scales used were designed using the 5-point Likert scale structure. The number 1 indicates complete disagreement, while 5 represents complete agreement. The respondents were asked to select one of the options (ie, ranging from 1 to 5) which suited them best in the surveys. An increase in the agreement rate is considered to be positive.

Analyses Used in the Study

By using SPSS 23.0 software, this study made a descriptive analysis of the basic situation of the investigated population, and tested the reliability and validity of the questionnaire, KMO test, bartlett spherical test. The structural equation model was constructed by Amos 27.0 to test the hypotheses.

4. Findings

Relationship between service attitude, patient commitment,

and patient satisfaction

Structural equation model was also called latent variable model by some scholars [22]. there are many indicators to judge whether the hypothetical model fits with the observed data, the evaluation of different fit indicators may be inconsistent with whether the model is supported or not. Researchers should follow multiple criteria: "In the test of hypothetical model, no single indicator value can be used as the only clear standard, and an idealized fit indicator value does not exist" [23]. For the purpose of practical application, Researchers should mainly use the chi-square degree of freedom ratio<5, CFI>0.9, RMSEA<0.08 and significance as the decision-making basis to judge whether the model achieves the overall degree of fit, because these indicators have more sufficiency [24]. By observing the model fit indices in figure 2, it can be seen that the model fits the data well, as shown by the significant chi square fit, CMIN/DF=3.323, which is lower than the cutoff point 5. Therefore, the model conforms to the chi square value of degrees of freedom. The CFI value is 0.983, which is greater than 0.9. The RMSEA value is 0.046, which is less than 0.08. Therefore, the initial structural model (Figure 2) is an effective model. As shown in Table 3, The analyses illustrated that hypotheses H1, H2 and H3 are confirmed.

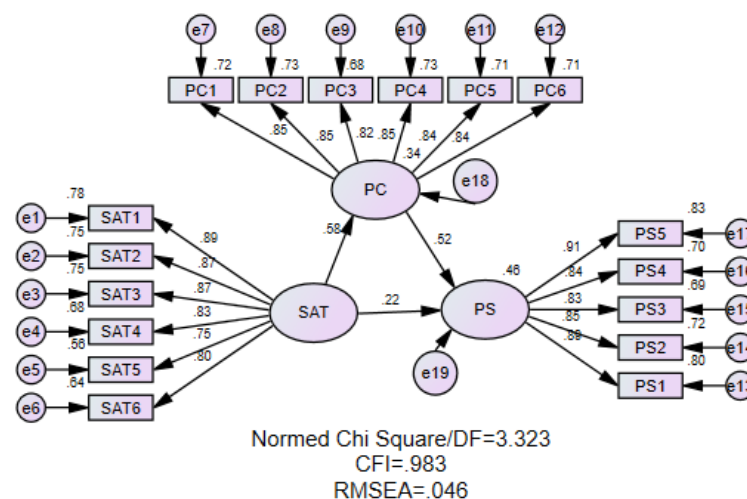


Figure 2. Structural equation model

Table 3. Hypotheses testing

Relationship	Hypotheses	S.E	St.Reg. Weight	C.R	Sig. Level	Conclusion
PS<---SAT	H1	.033	.232	7.063	***	Supported
PC<---SAT	H2	.034	.654	19.197	***	Supported
PS<---PC	H3	.031	.477	15.430	***	Supported

Note: SAT=Service Attitude; PC=Patient Commitment; PS=Patient Satisfaction

*** $P < 0.001$

Testing the mediating relationship of patient commitment Between service attitude and patient satisfaction

Because the standardized regression coefficient of the path direct relationship between SAT and PC is significantly correlated, $r=0.232$ ($P < 0.001$), the standardized regression coefficient of the path direct relationship between PC and PS is significantly correlated, $r=0.477$ ($p < 0.001$). Therefore, PC may partially mediate the relationship between SAT and PS, which needs to be tested to further determine the indirect relationship.

In order to test whether PC mediates the relationship between SAT and PS, the final SEM model has been tested,

and the results showed that the standardized regression coefficient of the direct path relationship between SAT and PS is significantly correlated. Because the standardized regression coefficient of the direct path relationship between SAT and PS is significantly correlated ($r=0.232$, $p < 0.001$), the mediating effect of PC between SAT and PS needs to be tested to further determine the indirect relationship.

PC can act as a mediator between PE and PS. In addition, the indirect effect of unstandardized regression showed that the indirect mediating effect between SAT and PS through PC is 0.311. AMOS was used to calculate the direct and indirect effects. The following table reported the mediating role of PC

between SAT and PS. The table3 and table4 show the detailed results.

Table 4. Unstandardized indirect effect

	SAT	PC	PS
PC	.000	.000	.000
PS	.311	.000	.000

Table 5. Indirect effects analysis using 5000 bootstraps

	95% Lower Bound			95% Upper Bound			P-value		
	SAT	PC	PS	SAT	PC	PS	SAT	PC	PS
PC	.000	.000	.000	.000	.000	.000	.000	.000	.000
PS	.265	.000	.000	.363	.000	.000	.674	.000	.000

The indirect effect of mediating standardization of SAT is 0.311, as shown in Table 3. Under the 95% confidence interval, the lower limit of the indirect effect of SAT on PS is 0.265 and the upper limit is 0.363, and the value "0" is not within this interval, so PC is a mediating variable between SAT and PS, H4 is verified.

5. Discussion

The results (Table3) revealed that service attitude had a significant impact on predicting patient satisfaction, patient commitment had a positive impact on patient satisfaction, and service attitude also had a positive and significant impact on patient commitment. In addition, the results in Table5 show that patient commitment plays a partial mediating role in the relationship between professional ethics and patient satisfaction.

This study found that the service attitude of medical staff in primary medical institutions affected patient satisfaction and patient commitment, this finding is consistent with some studies [25][26]. In this study, the mean value of service attitude is 4.32, which is at a high level. The standard regression coefficient between service attitude and patient satisfaction is 0.232, and the CR value is 7.063. The standard regression coefficient between service attitude and patient commitment is 0.654, and the CR value is 19.197. In primary medical institutions in China, the service attitude of medical staff is directly related to patient satisfaction and patient commitment, which may involve many reasons: Medical staff have low professional quality, lack of communication skills, lack of training and education, and high expectations of patients.

This study found that the patient commitment of medical staff in primary medical institutions affected patient satisfaction, this finding is consistent with some studies [27][28][29]. In this study, the mean value of service attitude is 4.12, which is at a high level. The standard regression coefficient between patient commitment and patient satisfaction is 0.477, and the CR value is 15.430. In China's primary medical institutions, there is a direct relationship between the patient commitment of medical staff and patient satisfaction, which may involve many reasons: The work pressure of medical staff is great, the expectation of patients is far from reality, and primary medical institutions lack incentive mechanism.

The last finding of this study is that patient commitment partially mediates the service attitude of medical staff and

patient satisfaction. It may be caused by the following reasons. Patient commitment to establish trust between patients and medical staff during medical treatment, which is an important bridge connecting service attitude and satisfaction. Patient commitment can strengthen the emotional connection between patients and medical staff, and make patients' expectation and evaluation of medical services more positive. Patient commitment can form an effective feedback mechanism, prompting medical staff to continuously improve their services, so as to continuously improve their service attitude.

6. Conclusion and Recommendations

Primary medical institutions in China play a very important role in the national medical system. These institutions are the first line of defense of medical services, directly facing the broad masses of grassroots, and bear the important responsibilities of basic medical and public health services. Studying the influencing factors of patients' satisfaction and improving the patients' satisfaction in primary medical institutions in China is of great significance for improving the quality of primary medical services, promoting the establishment of doctor-patient relationship and trust, optimizing the allocation of medical resources, promoting the formulation of medical policies, and enhancing the reputation and competitiveness of medical institutions. Therefore, the government of China, primary medical institutions and medical staff should recognize its importance and effectively improve patient satisfaction.

For the government, efforts should be made in the following aspects. Improve the level of primary medical services, improve the medical security system, strengthen doctor-patient communication and information transparency, promote medical technology and service innovation, and strengthen supervision and evaluation. As a primary medical institution, efforts should be made in the following aspects. Improve the quality of medical services, improve the conditions of medical facilities, and attach importance to the professional quality training of doctors and nurses. Finally, for medical staff in primary medical institutions, in the process of providing services, they should listen to patients' needs, patiently answer patients' questions, treat patients with empathy, take the initiative to care about patients' physical and mental health and provide enthusiastic services.

Declaration of Conflicting Interests

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