

Patient's Perceived Empathy Can Predict Doctor-patient Relationship in Medical Interaction

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Abstract

Objective To explore the relationship among patient perception of doctors' empathy, doctor-patient communication, and doctor-patient relationship.

Methods From November 2019 to April 2020, we used the CARE scale, the SEGUE framework and the PDRQ-15 scale to survey 3,039 patients from 14 provinces in China, ranging in age from 18 to 92 years old.

Results 1. The age of the patient, the level and type of hospital, the length of consultation, and the presence or absence of verbal and physical conflict have significant differences in the scores of perceived empathy; 2. There was a significantly positive correlation among patient's perceived empathy, doctor-patient communication, and the doctor-patient relationship ($r = 0.65 \sim 0.75, p < 0.001$). 3. The patient's perception of doctor empathy can not only directly predict doctor-patient relationship ($\beta = 0.75, p < 0.001$), but also influence doctor-patient relationship through the mediating effect of doctor-patient communication ($\beta = 0.56, p < 0.001$). Besides, the scores of CARE can effectively explain the variation of each stage of doctor-patient communication skills ($R^2 = 0.28 \sim 0.37$) and the satisfaction (52%) and approachability (54%) of the doctor-patient relationship scale.

Conclusion The age of the patient, the type and level of the hospital, and the consultation time affected perceived empathy. Doctor-patient communication plays a partial mediating effect in the influence of empathy on the doctor-patient relationship.

Practice implications: Medical institutes should improve the medical environment and carry out humanistic education and patient-centered communication skills training for doctors. These approaches will enhance patients' perceived empathy and therefore improve the doctor-patient relationship.

1. Introduction

With China's medical marketization and rapid social transformation, the issue facing our society, doctor-patient relationship is deteriorating, and doctor-patient conflicts occur frequently. But previous studies have confirmed that strengthening doctors' empathy ability was an important way to promote harmonious doctor-patient relationships [1-6]. Since being introduced into the medical field in the 1980s, empathy as one of the core elements of doctor-patient communication, has been widely proven to effectively improve the doctor-patient relationship [7-8]. Some studies have found that there may be a chain transmission relationship among doctor-patient empathy, doctor-patient communication, and doctor-patient relationship, that is, empathy first affects the effect of communication, and communication further affects doctor-patient relationship to indirectly highlight the importance of empathy [9-10]. Therefore, expressing empathy to patients can promote harmonious communication, which is conducive to establishing a good doctor-patient relationship. Specifically, when doctors conveyed empathy to patients, patient would disclose themselves more and provide more detailed medical and psychosocial information, which contributed to accurate diagnosis [11]. This enabled doctors to understand patients' medical and psychological needs and concerns, better understand and care of patients, and enhance patients' sense of empowerment and social support [12]. This was conducive to disease rehabilitation, and established a cooperative and friendly doctor-patient relationship [13]. When patients perceived the empathy of medical staff, they will feel respected, understood and cared for, so they can cooperate with doctors in treatment, have a more positive attitude towards treatment outcome, and have greater patient satisfaction. Therefore, the contradiction between doctors and patients is also reduced [14].

Last but not least, although a large number of studies have confirmed that empathy is the core element of doctor-patient communication [4-5,19,24-25], it is still uncertain whether empathy affects doctor-patient relationship through the mediation of doctor-patient communication. As the doctor-patient relationship is becoming increasingly tense and the doctor-patient conflict needs to be resolved urgently in China. At present, research in the field of doctor-patient relations needs to pay more attention to how to develop medical services and explore the psychological mechanism of establishing a good doctor-patient relationship [26]. To sum up, our study aims to analyze the influencing factors of patients' perceived empathy, and to investigate the influence of patients' perceived empathy on doctor-patient relationship and its mechanism through questionnaire survey, so as to improve the doctor-patient relationship, enhance medical satisfaction and provide a theoretical basis to better guiding medical education and training in the future.

The basic assumptions of this study are 1. Patient characteristics (gender, age, education level, income, etc.) and medical environment (hospital level, type, length of consultation) will affect patients' perceived empathy. 2. There is a positive correlation between patient's perceived empathy, doctor-patient communication, and the doctor-patient relationship. 3. Doctor-patient communication plays a mediate role in the influence of perceived empathy on the doctor-patient relationship.

2. Methods

2.1. Participants

A total of 4315 patients from hospitals in 14 provinces, including Yunnan, Heilongjiang, Hunan, Zhejiang, Shanghai and Anhui etc., were investigated in this questionnaire. Invalid questionnaires with extreme values, missing values and repeated the same options were excluded. At last, 3039 valid questionnaires were obtained. Among them, 1369 (45%) were males and 1670 (55%) were females. Patients aged from 18 to 92 have the ability to read and understand questionnaires, and agree to participate verbally.

2.2. Materials

2.2.1 Consultation and Relational Empathy Scale (CARE)

This scale was developed by scholars from the University of Glasgow and Edinburgh University in 2004[27]. It has been well-validated and extensively used internationally to measure empathy perceived by patients in the context of a therapeutic relationship. A systematic review evaluated patient-rated empathy measure tools and concluded that the CARE measure was the only one with evidence of reliability, internal consistency, and validity [28]. Its 10 items are organized on a five-point Likert scale, and there is no reverse scoring items. The total score is 10 to 50 points, with higher score reflecting greater perceived empathy. The Cronbach's α of the CARE was 0.926 in this study.

2.2.2 SEGUE Framework

This is a mature scale developed and tested by Northwestern Medical University in the United States. It includes 5 stages (dimensions): preparation, collecting information, giving information, understanding patient, and end the encounter. Each item is scored with the five-point Likert scale. Higher scores represent better communication skills [29]. The Cronbach's α was 0.964 in this study, and the Cronbach's α of the five sub-dimensions are 0.868, 0.915, 0.877, 0.864, 0.758, respectively.

2.2.3 PDRQ-15 scale

Vander Feliz-Cornelis and other scholars developed doctor-patient relationship scale in 2004. It consists of 3 dimensions and 15 items. There are 6 items in the dimension of 'patient satisfaction with medical care', 7 items of 'doctor's approachability', and 2 items about doctor' attitude towards the disease. Higher score indicate better the doctor-patient relationship [30]. The Cronbach's α is 0.941, and the three sub-dimensions are 0.894, 0.893, and 0.737, respectively.

2.3 Statistical methods

Data analysis was performed with SPSS23.0 and Mplus. Firstly, the reliability and validity of the scales were analyzed. Using the Cronbach's α to analyze the reliability of internal consistency; using the CFA to test the validity of structure. Then, *T*-tests and one-way ANOVAs were used to analyze the influence of patients' demographic variables on their perception of the doctor's empathy. Finally, the correlation and regression analysis were used to analyze the relationship between the questionnaires, and the mediation effect is tested by using process3.1.

3. Results

3.1 The impact of demographic variables on patients' perception of doctor empathy

We analyzed the effects of demographic variables of patients on perceived empathy. The results are shown in Table 1. There is significant difference by the patient's age, the level of the hospital visited, the type of hospital, the length of consultation, the experience of verbal quarrels or physical conflicts. However, there was no significant difference in the total CARE scale scores of patients with gender, income, education level, and region. Further Post Hoc Test found that: (1) The scores of patients over 61 years old were significantly higher than those of patients under 50 years old, and those between 51–60 also significantly higher than those under 30. (2) The level of the hospital where the patient visited had a significant impact on the perception of empathy. The 3A grade hospitals' score was significantly higher than that of 2A grade hospitals and other hospitals. (3) Types of hospitals in which patients visit: The empathy scores of public urban hospitals were significantly higher than private clinic. (4) Length of consultation: The score changes with the length of consultation, showing an inverted U-shaped relationship. Patients with shorter and longer consultation have significantly higher scores than those with normal consultation. (5) Whether there are verbal quarrels or physical conflicts: Patients who have experienced verbal quarrels and physical conflicts (i.e., doctor-patient conflicts) during treatment have lower scores of perceived empathy than patients who have never experienced verbal and physical conflicts.

Table 1
Results of analysis of differences in demographic characteristics

<i>characteristics</i>	<i>n</i>	<i>M ± SD</i>	<i>F</i>	<i>η²/d</i>	<i>90%CI</i>	<i>Post Hoc</i>	
Age(years)							
1 < 30	988	41.24 ± 5.21	10.18 ***	0.013	[0.01,0.02]		
2 31 - 4	711	40.34 ± 4.91				5 > 1,2,3	
3 41-50	525	40.43 ± 5.21				4 > 1	
4 51-60	495	41.14 ± 5.04					
5 > 60	320	42.13 ± 5.35					
Level of hospital							
1 3A	2375	40.83 ± 5.21	5.62 ***	0.006	[0.0015,0.01]		
2 2A	248	39.67 ± 4.65				1 > 2	
3 1A	82	40.73 ± 5.26				1 > 4	
4 others	334	40.02 ± 5.06					
Type of hospital							
1 Urban public	2630	40.78 ± 5.23	2.84**	0.006	[0.0008,0.01]	1 > 4,6	
2 Community	92	40.18 ± 4.62					
3 Urban private	22	40.09 ± 4.77					
4 Township public	101	39.42 ± 4.24					
5 Township Health Center	116	39.96 ± 4.68					
6 Private Clinic	37	38.57 ± 3.88					
7 Others	41	40.10 ± 5.74					
The length of consultation							
1 < 1min	85	43.99 ± 6.22			[0.04,0.06]	1 > 2,3,4	
2 1-5min	961	39.67 ± 5.18				5 > 2,3,4	
3 5-10min	1092	40.21 ± 4.79	42.01***			4 > 2,3	
4 10-15min	464	40.98 ± 4.91		0.052			
5 > 15min	437	42.85 ± 5.13					
verbal quarrel							
				<i>t</i>			
Yes	183	38.26 ± 4.83	-6.49***	0.507			
No	2856	40.79 ± 5.14					
physical conflict							
Yes	39	38.46 ± 5.90	-2.66***	0.399			
No	3000	40.67 ± 5.14					
*p < 0.05, **p < 0.01, ***p < 0.001							

3.2 Correlation of perceived empathy, doctor-patient communication, and the doctor-patient relationship

The results are shown in Table 2, There is a significant positive correlation between the three variables ($r = 0.70$, $p < .001$).

Table 2
Correlation analysis results

	<i>M</i>	<i>SD</i>	1	2	3
1 Patient perceptions of doctor empathy	40.64	5.16	1		
2 Doctor-patient communication	99.56	15.38	0.646***	1	
3 Doctor-patient relationship	60.62	7.25	0.750***	0.657***	1
* <i>p</i> < 0.05, ** <i>p</i> < 0.01, *** <i>p</i> < 0.001					

3.3 Mediation analysis

Regression analysis is used to explore the mediation role of doctor-patient communication in the perceived empathy on the doctor-patient relationship. The results are shown in Table 3. Taking doctor-patient communication as the dependent variable, perceived empathy has a significant predictive effect on doctor-patient communication (M1), taking the doctor-patient relationship as the dependent variable, perceived empathy has a significant predictive effect on the doctor-patient relationship (M2). Finally, adding doctor-patient communication into the regression equation, the predictive effect of empathy on the doctor-patient relationship is still significant, and the predictive effect of communication on the doctor-patient relationship is also significant (M3), indicating that doctor-patient communication plays a part of the intermediary between empathy and the doctor-patient relationship.

The mediation effect accounted for 25.63% of the total effect. Furthermore, the plug-in of Process3.1 is used to investigate the mediation effects. The 90% bootstrap confidence interval is [0.0303,0.0394], and the interval does not contain 0, which further shows that the mediation effect

Table 3
Mediation Effect Analysis

	M1: Doctor-patient communication	M2: doctor-patient relationship	M3: doctor-patient relationship
Patient perceptions of doctor empathy	0.65***	0.75***	0.56***
Doctor-patient communication			0.30***
R ²	0.42***	0.56***	0.616***
ΔR ²	0.42***	0.56***	0.056***
<i>F</i>	2170.53***	3893.39***	2407.636***
exists.			

3.4 Regression analysis of perceived empathy on the dimensions of doctor-patient communication and the doctor-patient relationship

Table 4
Regression analysis of dimensions

Variable	Doctor-patient communication(SEGUE)					Doctor-patient relationship (PDRQ-15)		
	Collecting Information stage	Giving information stage	Understanding the patient stage	The end of the inquiry stage	Satisfaction	Approachability	Attitude towards disease	
β	0.61***	0.60***	0.58***	0.58***	0.53***	0.72***	0.74***	0.46***
R ²	0.37	0.36	0.33	0.34	0.28	0.52	0.54	0.21
<i>F</i>	1759.24***	1672.35***	1524.75***	1552.86***	1207.39***	3315.39***	3569.31***	793.48***

Taking patient-perceived empathy as the independent variable, the five sub-dimensions of doctor-patient communication, and the three dimensions of the doctor-patient relationship as dependent variables, the regression analysis is performed. The results are shown in Table 4,

indicating that perceived empathy can effectively predict doctor-patient communication scale's dimension. The evaluation at each stage has the same effect on the doctor-patient relationship.

According to R^2 , except for the dimension of doctor-patient communication and the dimension of attitude toward disease in the doctor-patient relationship, the effective explanation of the variation of other dimensions of empathy reached more than 30% (0.33 ~ 0.54).

4. Discussion

4.1 Analysis of the main results

In this study, the average perceived empathy score of patients was 40.64 ($SD = 5.16$), which was slightly lower than American orthopedic patients of 46 ($SD = 6.3$) [31]. This result indicates that the empathy of medical staff should be improved, or other medical factors have weakened the perceived empathy. As expected, our results demonstrated that patient's age, hospital level, hospital type, and length of consultation affect the patient's perception of empathy, which is not completely consistent with previous research results. A study conducted in Argentina showed that patient's age, education level and hospital type affected the patient's empathy for doctors [32]. In addition, studies have shown that gender and educational background have a significant impact on empathy perception [33–34]. But in this study, patients with different genders, educational level and income have no significant difference in perceived empathy.

This study found that: 1. The older the patient was, the higher the empathy evaluation of doctors. The reason for this result may be that patients of different ages have different expectations and needs for medical care. Old patients have more panic and negative attitudes towards the disease, and they need emotional care and support. At this time, if doctor show their understanding of elderly patients, respect and warmth would make them feel warm and trustworthy, so older patients are more sensitive to empathy than young people [35]. 2. The difference in patient perception empathy scores between hospital levels and types indicated that higher-level hospitals may pay more attention to humanistic care, so medical staff have stronger empathy. Relevant research shows that compared with primary medical institutions, the management level, medical technology level and medical and health conditions of high-level hospitals are in a better state. Medical staff quickly and effectively receive and process patients' information, which also greatly improves the quality of doctor-patient communication.[36]. 3. The length of consultation affected the patient's perceived empathy. A foreign study have also found that more time consultation leads higher patient-perceived empathy. [37, 8]. However, our study found that the length of medical consultation and perceived empathy showed an inverted U-shaped curve. Shorter and longer consultation time made patients perceive higher empathy. The shorter time of the consultation, the higher the understanding of empathy may be because these patients themselves were milder and do not have too much negative, nervous, anxious, and worried emotions, so they did not have much needs of emotional care and understanding during the consultation. On the contrary, for patients with acute or serious illness, the length of consultation may be an effective predictor of the level of perceived empathy of patients. Unfortunately, medical resources are uneven, and the workload of medical personnel is too heavy. Because China's doctors are faced with greater time pressure and workload, they usually spend less time communicating with patients and sometimes they may become impatient. This was a contradiction between the quantity and quality of consultations ,44.7% of patients think that doctors are busy with tasks and lack time and energy. In addition, some doctors pay more attention to disease diagnosis rather than listening to patients' opinions, unwilling to communicate with patients, and lack proper training [38]. All these will make patients feel that the medical staff lack empathy and care, which is not conducive to the construction of a good doctor-patient relationship.4. This showed that the patient's medical experience influenced the subsequent cognition and behavior, and the unpleasant medical experience before would cause hostile prejudice and negative stereotypes to the medical staff, so the score is low.

The results of regression analysis confirmed the mediating effect of communication on empathy in promoting the doctor-patient relationship, which is of great significance to medical education and clinical training, and it also supports the Effect model of empathic communication in the clinical encounter [11]. It reveal the important position of empathy in clinical practice. Empathy is an important part of the doctor-patient relationship and the basis for promoting harmonious doctor-patient communication. As the regression results show: the more empathy a patient perceived in medical interaction, the more positive the evaluation of the doctor-patient communication process, and the more harmonious the doctor-patient relationship reported. Empathy improved the doctor-patient relationship by promoting harmonious and effective communication. Zwingmann(2017) et al. found that patient-centered empathic communication can reduce patients' anxiety and negative emotions in cancer diagnosis, and increase patients' trust in doctors [39]. Relevant studies have also shown that the higher the doctor's empathy, the more cordial and warm the patients feel. Empathy can strengthen the communication between the doctor and the patient, reduced the psychological distance, enhanced mutual trust, increased medical service satisfaction, and improved medical care outcome. [40]. The application of empathy skills in clinical practice enhanced the affinity with patients and family members, avoided many potential conflicts between doctors and patients, and not only protected the interests of patients but also facilitated the smooth development of diagnosis and treatment.

4.2 Implications for clinical practice

First of all, the hospital should evaluate the empathy of doctors from different perspectives. It is suggested that self-assessment may be a good strategy if the purpose is to make doctors or medical students recognize the clinical value of empathy. However, if the goal is to improve the quality of clinical care, education and other interventions based on self-assessment may not be enough, because self-assessment cannot capture the patient's perceived reality [16]. Hence, we need to give more consideration to patients' feelings in medical interaction. As our research results show, the more patients perceived empathy, the better they will evaluate the doctor's communication process and relationship. Patient's evaluation (direct feedback from beneficiaries) can promote medical staff to express their understanding and concern for patients. Last but not least, we cannot ignore the influence of other background factors on patients' perception of empathy.

Secondly, Considering the current medical situation in China, it is necessary to improve the empathy ability of medical staff and medical students. The root cause of many doctor-patient conflicts is that patients feel that the doctor is indifferent, impatient, and lack of communication. There is evidence that empathy can be cultivated and improved through intervention [41–42]. A study showed that when doctors received empathy training, patients' evaluation of doctors' empathy has been greatly improved [43]. Some scholars found that nurses provide empathetic care for inpatients to help them recover from diseases faster. Additionally, empathy would gradually decline with the growth of grades, but empathy training and clinical practice can effectively prevent empathy from declining [44–45]. For medical students, we should attach importance to humanistic education and appropriately increase the training courses of psychological knowledge or empathic communication skills. Moreover, research points out that simulated games, role-playing, Balint groups, standardized patients, narrative medicine, mindfulness training, feedback training, scenario simulation, group discussions, video viewing and analysis, material reading, lectures, etc. [1, 46–49] can effectively improve the empathy of medical providers.

Finally, the results of this study tell us that empathy is of great significance for establishing a positive doctor-patient relationship. Empathy promoted effective communication and improved poor doctor-patient relationship. Because the perceived empathy was affected by background factors (medical staff's characteristics, patients' characteristics, medical environment, etc.), hospitals not only provide convenient and comfortable medical environment for patients, but also provide humanized nursing services, respect and care. To be specific, the hospital administrator should take the needs of different patients into consideration and provide a good medical environment. For example, a reasonable hospital layout, convenient treatment process, warm consultation environment, reasonable consultation time and a comprehensive hospital management system [50] can keep patients in a positive mood, meet their psychological needs, and experience humanized services, enhance their perception of empathy [51]. In addition, the study found the mediating effect of doctor-patient communication, which encouraged doctors to adopt empathic communication. An empathic communicating clinician can achieve improved patient outcomes [11]. Listening and caring for patients is more important than providing professional medical advice when conveying empathy [5, 52–53]. Adopt a patient-centered communication, adhere to the principles of sincerity, respect and understanding, listen more, attach importance to nonverbal communication, respond to patient's demands and give timely feedback. These measures can meet the psychological needs of patients, make patients feel caring, warm and valued in clinical encounter, and promote the construction of a good doctor-patient cooperation relationship.

5 Conclusion

(1) The age of the patient, the type and level of the hospital, consultation length, medical experience all have an impact on perceived empathy.

(2) Doctor-patient communication plays a part in the mediating role in the influence of patient-perceived empathy on the doctor-patient relationship.

Declarations

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Declaration of interest

None.

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Author Contribution

Pei Wang designed the study plan, provided the research funds and data, and revised the paper, Caixia Han analyzed the data and wrote the first draft of the article, Qing Wu supervised the data analysis and paper writing, and Chenchen Liu assisted Han in analysing the data.

Ethical Approval

This study was approved by the local ethics committee of Shanghai Normal University and was conducted in accordance with the Declaration of Helsinki (2013). All participants were informed before the investigation began. All methods were carried out in accordance with relevant guidelines and regulations.

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Figures

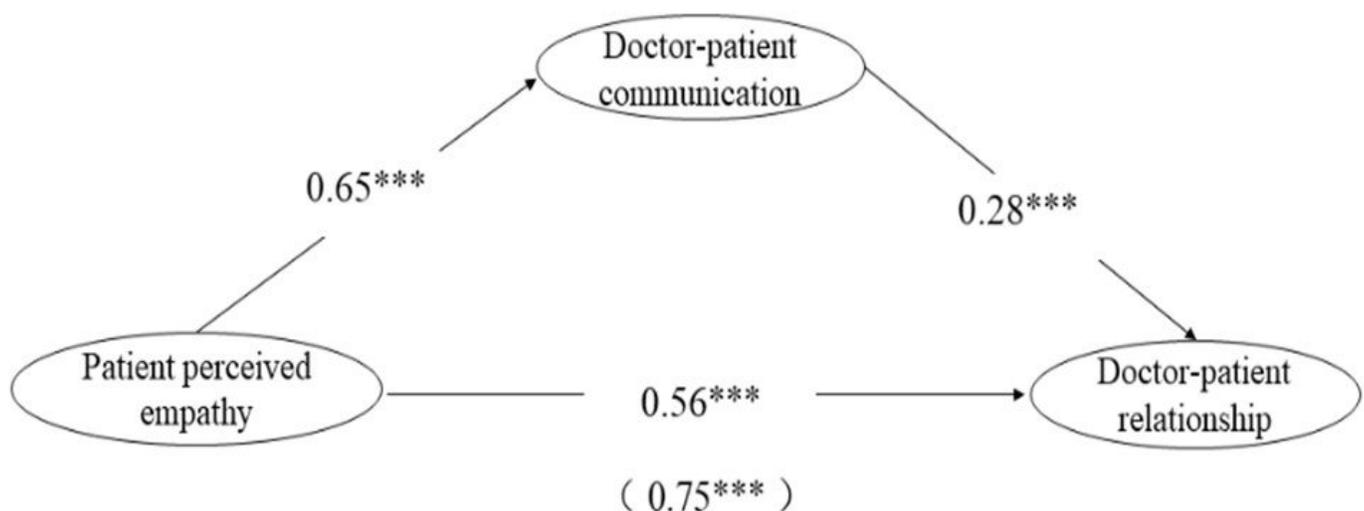


Figure 1

The mediation model of doctor-patient communication on the impact of patient perceived empathy on the doctor-patient relationship

***denotes $p < .001$