

Relationship study on doctor-patient communication performance, communicative skills, willingness and environmental perception of medical students

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ABSTRACT: Objective: Analyze the relationship among medical students' communication skills, communication willingness, environmental perception and the performance of doctor-patient communication. Methods: Based on the qualitative interview and theoretical research framework proposition, the study adopted regression analysis to analyze the reciprocal relationship among different variables and verified related propositions. Results: The score of medical students' doctor-patient communicative skills is 3.49 ± 0.41 . That of communicative tendency is 3.62 ± 0.72 . That of environmental perception is 3.46 ± 0.68 . And that of communicative performance is 3.60 ± 0.66 . In conclusion, single-child medical students in urban areas perform better in communication between doctors and patients. The regression coefficient of communicative skills to performance and tendency is 0.763 and 0.660 respectively. The regression coefficient of communicative tendency to performance is 0.562. The regression coefficient of interaction item between environment perception and communicative skills to communicative tendency and performance is 0.430 and 0.619 respectively. Conclusions: Communicative skill has a positive effect on communicative performance of doctor-patient relationship. Communicative tendency plays a role of intermediary agent between communicative skill and performance. Environmental perception has an up-regulated effect on the relation between skills and tendency, and that of communicative skills and performance as well.

Keywords: medical students; doctor-patient relationship; communicative ability; communicative skills; communicative performance

1 INTRODUCTION

Recently, more and more violent events against doctors happened in China, and the relationship between doctor and patient is worsening^[1-2]. The increasingly deteriorated Yi Nao (a medical or hospital disturbance) and violence against medical staff from patients have a serious influence on the job satisfaction of the medical staff, stability and the willingness of medical students to choose this profession^[3-5]. Research shows that the shortage of medical staffs' communication

ability and poor communication between doctors and patients are the important reasons which lead to so many medical disputes^[6]. Medical students should participate in clinical practice, which is an indispensable stage in the medical education, and doctor-patient communication education of medical students is an important part of this stage. This study analyzed the influence of communicative performance on communicative skill, willingness and environmental perception, hoping to enhance the inculcation of medical undergraduates on doctor-patient relation and improve their communicative abilities.

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2 DATA RESOURCES AND METHODS

2.1 *Survey instrument*

The communication ability assessing scale and basic status questionnaire for medical students was adopted to investigate the doctor-patient communication ability of medical students^[7]. The questionnaire took Holland vocational interest inventor, MBTI scale, SEGUE and LCSAS for references when it was designed. Thirty-three items about communication skill, willingness and performance of medical students were contained in the questionnaire and all these items were scored by Likert-type scale using 5 points. As a consequence of factor analysis with varimax, 5 common factors were selected: self-assessment; environmental perception; communication skill; communication performance; communication willingness^[8-11]. Cumulative contribution rate of these factors is 62.11%. As a consequence of reliability analysis, Cronbach's α of these factors are 0.761, 0.912, 0.886, 0.870 and 0.838, which means good reliability.

2.2 *Respondents of study*

The respondents of this research are medical students from three different medical colleges in Shandong, whose grade are from freshman year to grade five. 1600 questionnaires were sent out and 1389 were retrieved effectively, so the effective recovery rate is 95.14%. Men accounted for 37.8%, and women accounted for 62.2%; 21.7% of medical students in this research were freshmen, 19.0% of those were sophomores, 19.6% of those were junior students, 18.0% of those were senior students, and 21.8% of those were students in grade five; 63.3% of those were rural students, and 36.7% of those were urban students; 40.9% of those were the only child, and 59.1% of those were non-only child.

2.3 *Research methods*

This study was carried out in the questionnaire survey, at the same time we conducted qualitative interviews with relevant experts, teachers, educational administrators and students. On the basis of the qualitative interview data, we analyzed the relationship among communication skills, communication willingness, environmental perception and communication performance, established hypotheses, and then verified these hypotheses.

3 THEORETICAL ANALYSIS AND HYPOTHESIS

3.1 *Communication skills and communication performance*

Communication skills are the ability that we can express our ideas, feelings and attitudes to other people effectively and definitely, and can read other people's information fast and correctly through words, sound, and body language, which act as an intermediary. Good communication skills are the basis of effective communication between doctors and patients^[12]. In the interview, some medical staff pointed out that "It is very important to master communication skills and apply it in the doctor-patient communication, whenever the patients pour out, the treatment effect of listening to them patiently and then giving advices is completely different from that of interrupting their talks and giving advices for doctors, and the latter is likely to cause disputes or complains." In view of the above, we put forward a hypothesis.

H1: The doctor-patient communication skills of medical students have a significant positive impact on the doctor-patient communication.

3.2 *Intermediary role of communication willingness*

According to the theory of communication process^[13], the transformation from communication skills to effective communication is based on the willingness of communication between the two parties. Only if the two sides have the willingness to communicate, they will use their skills to carry out communication. According to the relevant study^[14], communication willingness and communication skills have a significant correlation, which means the more communication skills, the more communication willingness. In the interview, some medical students expressed that they lack of communication skills and do not be good at talking so they are unwilling to communicate with patients actively. And some clinical teachers said "although some medical students master good communication skills, but for some reasons, such as their characters and fear, they are not yet ready to communicate with patients, so the effect of communicating with patient is not really good." In view of the above, we put forward these hypotheses.

H2a: The doctor-patient communication skills of medical students have a positive impact on the doctor-patient communication.

H2b: The doctor-patient communication skills of medical students have an indirect impact on the effect of communication between doctors and patients through a positive impact on their communication skills.

3.3 The regulated role of environmental perception

The environmental perception is the ability that the medical students are aware of the factors which have an effect on the doctor-patient communication, so as to control and utilize them in the process of communications. Accurately apperceiving the factors in the environment does have effect on doctor-patient communications, so controlling and using it will effectively improve the effectiveness of the doctor-patient communication. In the interview, some medical dispute handling personnel said that, “when you are communicating with patients and their families, you should be aware of the influence of surroundings on them, such as in the sickroom or lobby and other crowded place, the gathering of people will cause mood swings. To percept the environment accurately and timely has a positive significance for the communication effect.” In view of the above, we put forward these hypotheses.

H3a: The medical students’ environment perception ability in the doctor-patient communication can positively regulate the doctor-patient communication willingness.

H3b: The medical students’ environment perception ability in doctor-patient communication can positively regulate the communication between doctors and patients.

4 DATA ANALYSIS AND RESULTS

4.1 Current situation of medical students’ communicative ability

According to the survey, the score of medical students’ doctor-patient communication skills was 3.49 ± 0.41 ; that of communication willingness was 3.62 ± 0.72 ; that of environmental perception was 3.46 ± 0.68 ; that of communication performance was 3.60 ± 0.66 . Most of the scores were concentrated on 3-4, and the percentages were 58.9%, 54.5%, 59.5% and 61.7%, respectively.

Differences existing in the scores of doctor-patient communication skills based on different demographic characteristics are medical students’ gender, original place and only or non-only child. Usually, the communication skills scores of female medical students,

the medical students from city, and those who are the only child are higher than others’.

Differences existing in the scores of doctor-patient communication willingness based on different demographic characteristics are medical students’ gender, original place and only or non-only child. Usually, the communication willingness score of female students, the medical students from city, and those who are the only child are higher than others’.

Differences existing in the scores of environmental perception based on different demographic characteristics are medical students’ original place and only or non-only child. Usually, the environmental perception score of female students, the medical students from city, and those who are the only child are higher than others’.

Differences existing in the scores of doctor-patient communication performance based different demographic characteristics are medical students’ gender, the original place, and only or non-only child. Usually, the doctor-patient communication scores of female students, the medical students from city, and those who are the only child are higher than others’.

4.2 Correlated analysis of variables

The results of correlation test among these variables are shown in Table 1, and there is a positive correlation among communication skills, communication willingness, environmental perception and communication performance.

4.3 Regression analysis and hypothesis verification

4.3.1 Test about direct influence of communication skills on communication performance

As shown in Table 2, in model 5, the regression coefficient of doctor-patient communication skills for medical students’ communication performance is 0.763, which means that the communication skills of medical students have a significant positive impact on their communication performance, so H1 is verified.

4.3.2 Test about intermediary function of communication willingness

As shown in Table 2, in model 2, the regression coefficient of communication skills for communication

Table 1. The coefficient of variables

Variables	Gender	Original place	Only or non-only child	Skills	Willingness	Environmental perception	Performance
Gender	1						
Original place	0.028	1					
Only or non-only child	0.230*	-0.504*	1				
Skills	0.092*	0.126*	-0.078*	1			
Willingness	0.108*	0.076*	-0.056*	0.663**	1		
Environmental consciousness	0.025	0.131*	-0.071*	0.714**	0.632**	1	
performance	0.079*	0.088*	-0.071*	0.763**	0.820**	0.759**	1

Notes: * $P < 0.05$, ** $P < 0.014$

Table 2. The coefficient of variables

Variables	Communication willingness			Communication performance			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Control variables							
Gender	0.117*	0.051*	0.069*	0.089*	0.014	-0.014	0.040*
Original place	0.043	-0.026	-0.029	0.053	-0.019	-0.008	-0.031
Only or non-only child	-0.059	-0.020	-0.019	-0.062	-0.023	-0.008	-0.014
Independent variable							
Communication skills		0.660**	0.267**		0.763**	0.392**	0.197**
Intervening variable							
Communication willingness						0.562**	
Interaction item							
Environmental perception × Communication skills			0.430**				0.619**
Adjusted R^2	0.017	0.442	0.472	0.014	0.582	0.758	0.645

Notes: * $P < 0.05$, ** $P < 0.014$

willingness is 0.660, which shows that doctor-patient communication skills of medical students have a significant positive impact on the doctor-patient communication willingness, so H2 proposition is valid; in model 6, after the introduction of communication willingness, the regression coefficient of communication willingness for communication performance is 0.562, which indicates that medical students' doctor-patient communication willingness has a significant positive impact on doctor-patient communication performance. Besides, after the introduction of communication willingness, the effect of communication skills on communication performance has been reduced (regression coefficient has reduced from 0.763 to 0.392). As a result, communication willingness plays an intermediary role between medical students' doctor-patient communication skills and doctor-patient communication performance, so H2b proposition was valid.

4.3.3 Regulatory effect of environmental perception

As shown in Table 2, in model 3, after introducing the interaction of environmental perception and communication skills, the regression coefficient of the interaction term to the communication willingness is 0.430, which shows that there is a significant positive moderating effect of environmental perception on medical students' doctor-patient communication skills and doctor-patient communication willingness, so H3 proposition is valid; in model 7, after introducing the interaction of environmental perception and communication skills, the regression coefficient of the interaction term to the communication performance is 0.619, which shows that there is a significant positive moderating effect of environmental perception on medical students' doctor-patient communication skills and doctor-patient communication performance, so H3 proposition is valid.

5 DISCUSSIONS AND SUGGESTION

(1) Communication skills have a significant positive effect on communication performance and it is imper-

ative to promote the cultivation of medical students' communication skills

According to the survey, the medical students' communication skills have a significant positive effect on the doctor-patient communication performance, thus strengthening the training of medical students' communication skills is of great significance to improve the doctor-patient communication. At present, almost all the medical colleges and universities have opened the relevant courses of communication skills training (such as public relations), but still less specialized communication skills training courses are set. Besides, medical students do not pay enough attention to this course, especially for the specialized communication courses, and the elective rate is only 9.1% [16]. Hence, the training course system of practicing students' communication ability should be improved, and relevant courses should be set as a basic course of medical education throughout the training of medical students. During the time in school, we should focus on the theoretical study which consists of the communication skills, during the internship, medical students are supposed to practice to communicate with patients, and shall accept the guidance of clinical teachers.

(2) Communication willingness plays an intermediary role between communication skills and communication performance, thus medical students should be encouraged to communicate with patients actively

According to the survey, communication skills directly affect communication performance, at the same time communication skills also produce an indirect positive impact on communication performance through communication willingness. It means the higher communication willingness, the better communication performance. Therefore, hospitals in which medical students practice and clinical teachers teach should actively encourage medical students to communicate with patients actively, and give some advice on the problem to help them to break the communication barriers between doctors and patients, promote the formation of active communication consciousness, and deepen the understanding of doctor-patient communication skills in practice through targeted guid-

ance, so as to improve doctor-patient communication ability.

(3) Environmental perception has a positive moderating effect on communication willingness and communication performance, thus targeted training should be taken to practice medical students' ability of perceiving and using in the environment of doctor-patient

According to the survey, environmental perception can positively improve medical students' communication willingness, and polish up their doctor-patient communication performance. Therefore, hospital should encourage medical students actively participate in various doctor-patient communications, such as inquiry, preoperative conversation, dispute handling, etc. to improve their sensitivity to the doctor-patient communication environment, and help them to accumulate sensing and experience or skills in the perception and use of communication environment.

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