

Strategies for doctor-patient information communication from the perspective of communication preference: a nationwide multi-center analysis in China

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Abstract

Background: In recent years, China has witnessed a surge in medical disputes, mostly evoked by ineffective information communication between multiple parts, such as the media. Information communication is an important link in doctor-patient relationship. Few macroscopic, multi-dimensional, and large-sample studies about doctor-patient communication information have been conducted in China. The aim of this study was to investigate the demand for information communication among Chinese doctors and patients, and to explore associated factors.

Methods: The questionnaire for this study was formed through literature and interviews. Based on a national survey conducted in 2016, this study included 2727 doctors and 1781 patients in 22 cities of China.

Results: Our analysis showed that the respondents recognized the roles of the network and governments in doctor-patient information communication, and the medical staff had a stronger demand for information communication than patients. Furthermore, the medical staff admitted the function of medical committees composed of experts and scholars, while the patients paid more trust to the media and consumer associations.

Conclusion: Doctor-patient information communication is highly needed for doctors and patients in China. Governments, media, Internet, medical committees, consumer associations play critical roles in doctor-patient information communication.

Background

In recent years, the focus of international doctor-patient communication research has shifted from patients to shared decision-making (SDM) [1–2]; from medical activities to social behaviors [3–5]; from clinical medicine, to general practice, family care and community medicine; from single disease or gender to multiple diseases and genders [6–7]. The hot words of the studies published in the Web of Science from 1991 to 201 included communication (1374), care (758), physician (556), satisfaction (550), primary care (460), physician-patient relation (390), outcome (387), doctor-patient communication (350), health care (337), information (331), etc. These studies provide references to manage doctor-patient relationship based on communication in China.

An increasing number of medical-patient conflicts or disputes, especially those distorted by the media, necessitate that doctor-patient relationship should be emphasized in medical education [8]. China is undergoing a systematic reform in medical system, aiming to provide safe, effective, convenient, and inexpensive health services to the people. In 2016, “Healthy China” was released as a national campaign to improve the health of people. In 2018, the Ministry of Education proposed the plan of “new medical education” with a focus on humanistic education. In this light, a harmonious doctor-patient relationship should be established nationwide through joint action. Therefore, doctor-patient information communication should be promoted from the perspective of stakeholders.

Tools helping patients to participate in decision-making (Patient Decision Aids, PtDAs) have been developed, such as Patient Decision Aids library OHRI-IRHO, Patient Decision Aids of Ottawa and the University of Sydney, Patient Decision Aids and Information of the Mayo Clinic in the United States. International Patient Decision Aid Standard (IPDAS) has been applied globally. Numerous scales for evaluating doctor-patient communication have been generated based on SDM and PtDAs, such as PCPS[9] dyadic OPTION[10–11] DAS-O[12] DSAT-10[13] PDRQ – 15[14], etc. Bristol-Myers Squibb set out to build an organizational capability to communicate complex health topics to patients, called the Universal Patient Language™, or UPL [5].

Professor Mingjie Zhao introduced the concept of SDM into China [15], which was later translated SDM into "Shared Decision Making"[16]. In China, studies on SDM in doctor-patient communication mainly focused on the introduction of foreign theories before 2013, while after 2013, SDM in clinical doctor-patient communication was emphasized. However, no consensus has been reached on the design, evaluation and application of SDM in doctor-patient communication backgrounded by Chinese language, culture and health system [17]. In recent years, Chinese scholars have conducted a series of studies on doctor-patient information communication.

DDPRQ-10 [18], a doctor-patient relationship scale in China, has been designed based on PDRQ – 15. Also, a system has been developed to evaluate doctor-patient relationship from the perspective of patients [19]. In this system, clinical thinking and patient-oriented thinking are weighted at different stages of diagnosis and treatment [20]. At the same time, the main factors affecting doctor-patient harmony are analyzed, such as resources, organization, implementation, results and some external factors[21]. Based on 278 questionnaires survey of doctor-patient relationship, 5 factors have been set up, including government, hospital, medical personnel, the media and patients [22].

On the whole, studies in China display the following characteristics: First, most are conducted as micro-level studies, while there lack on macro-level researches concerning influencing factors or evaluation system of doctor-patient communication; second, most focus on either health providers or health receivers, while multidimensional investigations regarding doctor-patient as a dual subject are infrequent; Third, the sporadic studies on factors affecting doctor-patient relationship still lack large-sample data. Therefore, combining data generated from experience and literature, we designed a questionnaire to analyze the information communication between doctors and patients.

Therefore, the objective of this study is analyze the information communication between doctors and patients and influencing factors. Our findings are expected to provide suggestions for promoting doctor-patient communication in China.

Materials And Methods

A cross-sectional study was conducted. Structured interviews were performed to formulate the questionnaire in this big-sample survey in China. The survey was conducted in hospitals across north and northeast China (Beijing, Tianjin, Shanxi, Liaoning, Jilin and Heilongjiang), east China (Shanghai,

Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi and Shandong), central south China (Henan, Hubei, Hunan, Guangdong, Guangxi and Hainan), southwest and northwest China (Chongqing, Guizhou and Yunnan). Medical workers including clinicians and nurses were recruited from departments of internal medicine, surgery, pediatrics, obstetrics and gynecology, outpatient and emergency.

Data Collection

The survey was conducted from March 2016 to May 2017. We sent an anonymous, self-administered questionnaire to each participant, along with a notification letter and return envelope. The participants completed the questionnaire independently with informed consent. Teaching assistants in hospitals were trained to guide the filling and collection of questionnaires. The questionnaires were collected and sealed into a box set in each hospital. The box could only be opened by researchers in the present study. The study purpose and rights of the doctors and patients were declared in the letter. Participants had to complete the questionnaire on the spot. A total of 4508 were distributed, completed and returned, including 2727 valid questionnaires from doctors and 1781 from patients, with a response rate of 100%.

Questionnaire

First, we analyzed the key words and mutated words in 4,038 studies (published in English) on doctor-patient communication from 1991 to 2015. These words outlined the present survey. Next, based on the purposive sampling principle, we chose 8 scholars engaged in medical humanities education and research in China, 20 patients and 20 doctors of a senior title from Grade A Class Three hospitals in Nanjing, China. According to semi-structured interviews and expert scoring, we determined the influencing factors of doctor-patient communication and the items on the questionnaire. These medical staff were not involved in the following survey. Finally, "A Questionnaire on the State of Doctor-patient Information Communication and its Influencing Factors in China" was formulated and pre-tested by 60 participants who were subsequently excluded from the study. According to the feedback of these participants, the questionnaire was further modified. For all questions, the Cronbach's alpha coefficient was 0.86.

The modified questionnaire covered five sections: (1) respondents' demographic characteristics data; (2) status of doctor-patient information communication, concerning what information needs communication and where to communicate; (3) the role of the government in doctor-patient information communication, concerning the effectiveness of governmental counseling before and after the release of policies; (4) the role of the media and Internet in doctor-patient information communication, concerning their necessity and requisites to be involved in doctor-patient information communication; (5) the role of medical committees and consumer associations (especially those of high recognition) in doctor-patient information communication.

In this study, we mainly focused on the demand of doctors and patients for doctor-patient information communication, and worked out a list of influencing factors. To evaluate the demand, we used questions "Do you hope to make more sufficient information communication?" and "Where do you prefer to communicate with patients?" To evaluate the influencing factors, we set a five-point scale from "very

necessary (or very representative)” to “completely unnecessary (or completely unrepresentative)” to assess the role of doctors and patients, the government, the media and Internet, committees in doctor-patient information communication.

Data Analysis

The data were put by two researchers with Epi Data 3.2, then assessed by a third researcher for their accuracy. The statistical analyses, including descriptive analysis and chi-square test, were conducted with IBM SPSS Statistics 20.0 (IBM Corp., Armonk, NY, USA). All of the analyses began with descriptive statistics of demographic characteristics. $P < 0.05$ was considered statistically significant.

Results

Demographic Characteristics

Table 1 summarizes the sociodemographic characteristics of both doctors and patients. The surveyed medical staff included 1369 males (50.2%), 1358 females (49.8%); or 622 graduates (22.8%), 1399 undergraduates (51.3%), 556 (20.4%) junior college graduates, 147 (5.4%) with a technical secondary school’s diploma, 3 (0.1%) with a high school’s diploma; or 616 (22.6%) with a senior professional title, and 785 (28.8%) with an intermediate professional title, 1,020 people (37.4%) with a junior professional titles, and 306 people (11.2%) without a professional title. The surveyed patients included 803 males (45.1%), 978 females (54.9%); or 112 (6.3%) postgraduates, and 379 (21.3%) undergraduates, 481 (27.0%) with a technical college’s diploma, 809 (45.4%) with a degree of technical secondary school or below; or 105 people (5.9%) with a senior title, 346 people (19.4%) with an intermediate title, 190 (10.7%) with a junior title, and 1140 (64.0%) without titles.

Table 1
Sociodemographic characteristics of participants (N = 4508).

Characteristics	Doctor		Patient	
	N	%	N	%
Gender				
Male	1369	50.2	803	45.1
Female	1358	49.8	978	54.9
Age				
≤ 30	959	35.1	499	28.0
31–39	663	24.3	482	27.1
40–49	569	20.9	417	23.4
≥ 50	536	19.7	383	21.5
Educational level				
Postgraduate	622	22.8	112	6.3
Undergraduate	1399	51.3	379	21.3
Junior college graduate	556	20.4	481	27.0
Technical secondary school or below	150	5.5	809	45.4
Professional title				
Senior	616	22.6	105	5.9
Intermediate	785	28.8	346	19.4
Junior	1020	37.4	190	10.7
No	306	11.2	1140	64.0

Demand for doctor-patient information communication

Table 2 shows that most of the interviewees were in high demand for doctor-patient information communication (2693 medical workers, N = 98.7; 1753 patients, N = 98.5); only few expressed low demand (34 medical workers, N = 1.3; 28 patients, N = 1.5).

Table 2
Demand for doctor-patient information communication.

Demand	Medical workers		Patients	
	N	%	N	%
Very necessary	1251	45.9	786	44.1
Necessary	1196	43.8	689	38.8
A little necessary	246	9.0	278	15.6
Not necessary	24	0.9	22	1.2
Absolutely not necessary	10	0.4	6	0.3

Selection of occasions for doctor-patient information communication

As shown in Table 3, most participants preferred doctor-patient information communication through the Internet (1263 medical workers, N = 46.3; 937 patients, N = 52.6). Other preferences of medical workers included experts and scholars (1195, N = 43.8), government officials (1161, N = 42.6), acquaintances (860, N = 31.5), and media (724, N = 26.5). Other preferences of patients included media (573, N = 32.2), government officials (477, N = 26.8), acquaintances (426, N = 23.9), experts and scholars (393, N = 22.1).

Table 3
Preferred intermediate parts involved in doctor-patient information communication (N = 4508).

Preferences	Medical workers		Patients		χ^2	P
	N	%	N	%		
Government Officials	1161	42.6	477	26.8	116.01	0.000
Experts and Scholars	1195	43.8	393	22.1	223.387	0.000
Acquaintances	860	31.5	426	23.9	30.622	0.000
Media	724	26.5	573	32.2	16.663	0.000
Internet	1263	46.3	937	52.6	17.153	0.000

Role of government in doctor-patient information communication

As shown in Table 4, most respondents were satisfied with the role of government in doctor-patient information communication (2666 Doctors, N = 97.7; 1742 patients, N = 97.8); few exhibited dissatisfaction (61 medical workers, N = 2.3; 39 patients, N = 2.2).

Table 4
Role of government in doctor-patient information communication (N = 4508).

Role	Medical workers		Patients	
	N	%	N	%
Very necessary	2070	75.9	1271	71.4
Necessary	537	19.7	380	21.3
A little necessary	59	2.1	91	5.1
Not necessary	56	2.15	32	1.8
Absolutely not necessary	5	0.2	7	0.4

Role of media in doctor-patient information communication

Table 5 reveals that the majority of respondents were satisfied with the role of media in doctor-patient information communication (Doctor 2506, N = 91.9; Patient 1708, N = 95.9); few delivered dissatisfaction (Doctor 221, N = 8.1; Patient 73, N = 4.1)

Table 5
Role of media in doctor-patient information communication (N = 4508).

Role	Medical workers		Patients	
	N	%	N	%
Very necessary	1336	49.0	959	53.9
Necessary	849	31.1	533	29.9
A little necessary	321	11.8	216	12.1
Not necessary	146	5.3	50	2.8
Absolutely not necessary	75	2.8	23	1.3

Role of associations in doctor-patient information communication

Table 6 mirrors that the majority of respondents were satisfied medical committees in doctor-patient information communication (2323 medical workers, N = 85.2; 1511 patients, N = 84.9); some indicated dissatisfaction (404 medical workers, N = 14.8; 270 patients, N = 15.1).

Table 6
Role of medical associations in doctor-patient information communication (N = 4508).

Role	Medical workers		Patients	
	N	%	N	%
Very representative	589	21.6	320	18.0
Representative	933	34.2	579	32.5
A little representative	801	29.4	612	34.4
Not representative	236	8.7	162	9.1
Absolutely not representative	168	6.1	108	6.0

Table 7 shows that most of the respondents were satisfied with the role of consumer associations in doctor-patient information communication (2067 medical workers, N = 75.8; 1571 patients, N = 88.2), and some expressed dissatisfaction (660 medical workers, N = 24.2; 210 patients, N = 11.8).

Table 7
Role of consumer associations in doctor-patient information communication (N = 4508).

Role	Medical workers		Patients	
	N	%	N	%
Very representative	395	14.5	477	26.7
Representative	718	26.3	605	34.0
A little representative	954	35.0	489	27.5
Not representative	394	14.4	131	7.4
Absolutely not representative	266	9.8	79	4.4

Discussion

In the present study, we found that 98.7% of medical workers and 98.5% of patients have high demands for doctor-patient information communication, of which 45.9% of medical workers and 44.1% of patients have very high demands, respectively.

Doctor-patient information communication should receive attention from Chinese policymakers and hospital managers. Studies in China have analyzed the administrative and social factors affecting doctor-patient communication [21–22], but most just focus on the skills and behaviors of doctor-patient communication. Macro-level studies have been rarely conducted to evaluate the effect of information communication, policymakers, social organizations, etc.

Previous research has shown that patients are more passive in doctor-patient communication. However, in a media-dominated era, patients have changed from “silent majority” to “loud defenders” [23]. Our survey revealed that the Internet was the most preferred approach for doctor-patient information communication. Our survey also showed that news agencies and the Internet facilitated this communication due to its transparency and omnipotence.

Some studies have proposed that empathic communication can increase patients' adherence to treatment[24]. A higher adherence enables the patient more obedient to the doctor's recommendations. The effectiveness of medical treatment can be enhanced by a smooth doctor-patient relationship in which the patient and the doctor efficiently communicate their information of illness and treatment[25]. Our study findings suggested a stronger demand for information communication in medical workers than in patients, which may be partially due to the compulsory education of doctor-patient communication in China. However, in routine doctor-patient communication, doctors always play a dominant role, a mode that needs to be adjusted. We also found that in addition to Internet, information communication was also preferred to be accomplished through experts, scholars and the government, and the media; but the media ranked at the bottom of the list. In information communication, doctors preferred to rely on organizations and government officials. The media was less preferred by medical workers than by patients. However, patients were more likely to rely on experts and scholars in doctor-patient information communication, and they expressed concern about the patient representatives of experts and scholars

In China, some studies hold that governments, hospitals and media play leading roles in doctor-patient relationship, and governments and media may exert forces on hospital management[23]. In the present study, we found that in doctor-patient communication, the government played a critical role, just as the media and the Internet did. Medical committees composed of medical experts and scholars should be invited into medical information communication. The performance of consumer associations was highly and positively evaluated by patients, but the communication between the medical committees and consumer associations should be facilitated.

In doctor-patient information communication, Chinese scholars propose that “hospitals and doctors should develop a sense of humanism” and “a society respecting medicine and medical workers should be established”. These proposals require a combined force of multiple factors. In the present study, we found a positive response to group communication. The government needs to expand the channels for doctor-patient information communication, and improve the satisfaction of both parts through policy and surveillance. The media and the network should balance discourse power of doctor-patient information communication, which means that neither doctors nor patients should dominate the discourse. Medical committees and consumer associations should promote mutual recognition through eliminating positional difference. Hospitals and medical committees can enhance their professional credibility, making themselves more trustworthy in doctor-patient information communication.

There are several methods to increase the sense of pleasure during medical treatment and information communication, such as considering different patients' preferences for communication when receiving

bad news [7], increasing perceived risk and patients' trust in medical staff during medical treatment[26], laying emphasis on extra verbal communication in addition to the verbal of illness such as doctor's self-introduction, doctor-patient handshake and doctor's note writing[27], translating the benefits of affectionate communication into the doctor-patient setting[28]. Through these methods, information would be more efficiently communicated between Chinese doctors and patients.

This study has several limitations. First, our study was limited to Grade A Class Three hospitals, most in East China. Second, we collected the data with a self-filled questionnaire, which may lead to the recall bias of interviewees. Finally, we did not analyze the characteristics of information communication on various occasions.

Conclusions

Governments, media, Internet, doctor/patient associations play critical roles in doctor-patient information communication. In particular, the government's role should be strengthened to improve the macro-level doctor-patient information communication. Special measures should be taken to guide the doctor-patient information communication in China.

Abbreviations

SDM:Shared decision-making

Declarations

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Availability of data and materials

All data generated or analysed during this study are included in this published article [and its supplementary information files].

Ethics approval and consent to participate

The cognitive research covered in the report was conducted in accordance with the Declaration of Helsinki and was subject to ethical review. Ethical approval was granted by the Institutional Review Board of Nanjing Medical University before data collection commenced. All study procedures in each hospital were approved, and all participants gave their informed consent.

Consent for publication

All authors agree to publish.

Competing interests

The authors declare that they have no competing interests.

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