

Smart Hospital: An Empirical Study on the New Doctor-Patient Relationship under the Background of Intelligent Media Technology Changes

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Abstract

With the development of intelligent media technology, people's demand for intelligent medical treatment is also increasing. In this paper, smart hospitals have emerged. At the same time, the originally tense doctor-patient relationship has been eased with the intervention of smart devices. What this study hopes to understand is the new doctor-patient relationship in the context of changes in intelligent media technology. To explore health communication issues such as the construction of a new doctor-patient relationship under the changing media environment, this study used a variety of research methods and analysis methods. The embedding of intelligent media has significantly alleviated the contradiction between doctors and patients and promoted the construction of a new doctor-patient relationship. This research has a certain promoting effect on the construction of smart hospitals, which is conducive to broadening patient communication channels, empowering medical staff's information collection capabilities, and enhancing the interactivity of hospitals as a medical information dissemination platform.

Keywords

Smart hospital; intelligent media technology; change; new doctor-patient relationship; questionnaire survey method.

1. Introduction

At present, with the rapid development of generative artificial intelligence technologies such as ChatGPT and Sora, the intervention of intelligent media technology in hospital scenarios has become a reality. In some hospital diagnosis and treatment scenarios, smart devices have begun to affect the process of patients seeking medical treatment. For example, since 2023, Peking Union Medical College Hospital has gradually implemented smart medical services such as smart appointments, smart guidance, and smart payment. These intelligent functions equipped with media have further enriched the communication channels between doctors and patients. In terms of the theory and model of doctor-patient communication, the "patient role" theory was first proposed by Parsons in his book *The Social System*. The theory believes that the patient role is an "abnormal social state" that deviates from the "normal social role" (Li Fang, 2022). Therefore, this study focuses on the new doctor-patient relationship, which can effectively empower the theoretical research on doctor-patient communication and promote the development of health communication theory. At present, digital and intelligent technologies continue to have a profound impact on society. The construction and development of a new doctor-patient relationship are imminent, and it is urgent to practice feedback with theory.

Smart hospitals have achieved digital and intelligent transformation with the help of digital media technology. Studies have analyzed the situation in public places such as community hospitals and tertiary hospitals. The survey found that the satisfaction rate of hospital smart services before, during, and after diagnosis was 32.3% to 42.1% (Li, Zhang, & Zhu, 2023), which shows that the current construction of smart hospitals has achieved significant results in improving patient satisfaction. This research explores health communication issues such as the construction of a new doctor-patient relationship under the changes in the media environment. In this regard, the author chose the questionnaire survey method for empirical research, using the technology acceptance model and SPSS software to adopt quantitative analysis and other research methods to analyze the changes in intelligent media. A study was conducted in a smart hospital under the Ministry of Health of China, examining the correlation between the patient's gender, age, education level, and many variables in the measurement scale. At the same time, participatory observation methods were also adopted to observe the APPs of smart hospital construction institutions such as Peking Union Medical College Hospital. The analysis found that the construction of smart hospitals has significantly helped alleviate doctor-patient conflicts and promoted the construction of a new doctor-patient relationship.

2. Literature Review

2.1. Smart media technology and smart hospitals

Before smart devices were widely used in hospitals, the doctor-patient relationship was in an "asymmetric" power device. Although medical ethics tried to restore its balance, the communication between doctors and patients was still blocked by factors such as "empathy fatigue" (Yang & Zhang, 2019; Thomas Wischmayer et al., 2020: 388); in the context of the construction of "smart hospitals", chatbots and other technologies are used in mobile medical and Internet diagnosis and treatment services. Patients' medical questions can be responded to by smart doctors and virtual nurses promptly, and the difficulty of establishing trust between doctors and patients is reduced (Fan et al., 2024; Zhai & Chen, 2022: 2).

Looking back at this change from the perspective of smart media, in the process of the development of smart media technology, the logical level of media extension to the human brain has become more and more complicated, and artificial intelligence has a clear impact on the comprehensive scenarios of social governance, including hospitals (Baum, 2020). Although we are currently in the early stages of the intelligent era, we can still see the profound impact of the smart media environment on interpersonal relationships and interpersonal communication from two perspectives: the change of media on people's perceptual skills and the simulation of media on people's rational thinking (Shao & Xu, 2023). Looking at the impact of intelligent technology on the living world, existing studies have focused on the effects of smart technology applications on manufacturing and agriculture. Recent empirical studies also agree that intelligent media, an important achievement of the fourth scientific and technological revolution, has profoundly affected social production and life (Openshaw, 1995; Chou, 2018).

2.2. New doctor-patient relationship in the changing media environment

The process of media environment change has experienced a development history from oral communication, text communication, and print communication to electronic communication. British sociologist John Thompson attaches importance to the theoretical value of "media change" and believes that the process of media change has accompanied the development of modern society and is an important perspective for explaining modernity (Wen, 2022). Media change has achieved the formation and development of "mother media". At the same time, "technology", "time" and "humanity" are considered to be the three core variables affecting media change, and the three together act on the change of the media environment (Xu, 2018).

As far as the empirical research carried out in hospital scenarios in recent years is concerned, the development of the doctor-patient relationship has also been greatly affected by the application of emerging media technologies such as social robots and intelligent algorithm recommendations (Praspaliauskiene, 2022).

As the central content of the modern doctor-patient relationship, the doctor-patient trust model is manifested as "origin, emotion, trust" (Lv, 2024). Doctor-patient trust can be improved by improving primary health management services (Cai et al., 2023). The sense of security that accompanies doctors' high social recognition of their roles may make them more likely to follow the professional requirements and commitments expected by society, and actively promote a more harmonious doctor-patient relationship (Li Yao et al., 2024). Doctors' perception of the doctor-patient relationship environment will affect doctors' defensive medical treatment of patients (Zhang et al., 2024). For example, in studies on pregnant women, the construction of the doctor-patient relationship was affected by the "surveillance" or "control" of intelligent media. After pregnant women activated their self-defense mechanisms, they were prone to a certain resistance to intelligent media, and the image characteristics of pregnant women as patients became more "self-centered" (Diamond-Brown, 2023).

3. Methodology

This study hopes to understand the new doctor-patient relationship under the background of intelligent media technology change. In essence, it is a study to explore the acceptance and use of intelligent media technology by doctors and patients under the new communication situation. At the implementation level, this study intends to use the questionnaire survey method for empirical research. The questionnaire compilation relies on the UTAUT model under the technology acceptance theory. After the model is determined, the research hypothesis is designed, and the Likert scale is used to measure the respondents' understanding and attitude.

3.1. Theoretical basis and research hypothesis

Perceived usefulness and willingness to adopt: In the environment of technological change, people's willingness to use new technological products is often affected by perceived usefulness: when individuals believe that they can quickly improve work efficiency, reduce burdens, or gain benefits through the use of new technological products, higher perceived usefulness can promote their actual actions. In the hospital scenario, the usefulness cognition of doctors and patients based on intelligent media technology has a certain impact on their willingness to adopt, but further research is needed to determine its mechanism of action. For example, the characteristics of the government WeChat platform such as perceived usefulness, interactivity, and anti-interference are found to have a great impact on the communication mechanism of government WeChat after being substituted into the technology acceptance model (Xia & Chang, 2014). In the analysis of online food ordering, the relationship between perceived usefulness, perceived ease of use, perceived taste, and online food ordering has also been further confirmed (Chang et al., 2011). Based on this, this paper designs the following hypotheses:

H1: Doctors' perception of the usefulness of smart media technology positively affects their willingness to adopt;

H2: Patients' perception of the usefulness of smart media technology positively affects their willingness to adopt;

Perceived ease of use and willingness to adopt: In an organizational environment, people tend to have the willingness to adopt valuable technologies and then take actual actions. Perceived usefulness plays an important mediating role in promoting the realization of adoption intention and behavior. For example, in the content analysis of social media APP privacy policies in existing studies, the "dual perception perspective" highlights the value and role of perceived

usefulness (Zhu et al., 2022). In an empirical study on the psychology of online game users, the variable of perceived usefulness was constructed as "perceived usefulness of virtual goods" in combination with the actual research (Chu et al., 2021). In another empirical study on the emotional carnival of online live broadcast audiences, it is believed that the value of the Elaboration Likelihood Model (ELM) is highlighted. This model makes up for the deficiency that the current UTAUT model and other models cannot measure the variable of emotion (Yang et al., 2023). Based on this, this study designed the following hypotheses:

H3: There is no correlation between doctors' perception of the ease of use of smart media technology and their willingness to adopt it;

H4: Patients' perception of the ease of use of smart media technology positively affects their willingness to adopt;

3.2. Questionnaire design and distribution

In terms of questionnaire design, this study designed a questionnaire based on the different perspectives of doctors and patients, and the questionnaire design was constructed based on the UTAUT model. The design of the questionnaire items is closely linked to the research hypothesis. This survey uses the Likert scale in the compilation of the questionnaire. In terms of questionnaire distribution, this survey distributed about 10 copies to doctors and about 100 copies to patients. The ratio of doctors to patients among the respondents was about 1:10. As for questionnaire analysis, the data analysis of this survey mainly relies on SPSS analysis tools. First, reliability and validity tests are carried out, and then the hypothesis is verified after descriptive statistics are completed. The analysis mainly includes correlation analysis, significance analysis, and multi-factor analysis.

3.3. Participatory Observation

As a vital way of quantitative research, participatory observation is regarded as a key to dealing with the materials collection, while it would offer the necessary content for the relative observation. While the method of participatory observation is becoming an accepted way in social science research, it is increasingly recognized by former scholars, as some of the research tends to be concerned with 'knowledge for understanding' (Clark, Holland, Katz & Peace, 2009). In this paper, four hospitals adopted AI technology as the main tool for constructing communication ways, for instance, Peking Union Medical College Hospital, Huashan Hospital of Fudan University, West China Hospital of Sichuan University, and Peking University Third Hospital.

Table 1 Basic Information of Observation

Number	Area	Hospital	AI+(Yes/No)	Condition of Smart Hospital
A1	Beijing	Peking Union Medical College Hospital	Yes	On running.
A2	Chengdu	Huashan Hospital of Fudan University	Yes	On running.
A3	Shanghai	West China Hospital of Sichuan University	Yes	On running.
A4	Beijing	Peking University Third Hospital	Yes	On running.

Through participatory observation, the content offered by Peking Union Medical College Hospital is irregular, while the column on oral history is regularly listed on its AI platforms. When I tried to use the AI terminal as a vital way of communicating with the hospital, it showed that AI technology has affected much on the users. On aspects of communication, the content of

Peking University Third Hospital varied a lot, while it coped with the AI robots on patients. In this paper, a patient who wants to cure a stomach ache should do more to improve their communication with AI robots, as the patient will obtain more help from the hospital as well. Many hospitals overlook the importance of AI robots, while they more care about the improvement of technology. Compared with the condition of Huashan Hospital of Fudan University, the content of West China Hospital of Sichuan University addressed that the patient should do more to communicate with the AI robots. On aspects of smart hospitals, the main content of hospitals varied a lot, as it kept pace with the technology development. For instance, the seasonal feature is what some of the illnesses shared about, as it could offer some necessary issues for the patients.

4. Results

4.1. Questionnaire survey results

The questionnaire surveys for patients and medical staff have different focuses. For the questionnaire survey for patients, this study mainly adopted a random sampling method to screen out a more typical patient sample. The questionnaire survey was implemented from March 2024 to June 2024. 145 questionnaires were distributed and 140 valid questionnaires were collected, with a questionnaire recovery rate of approximately 96.55%. In the analysis of the questionnaire, reliability, and validity tests were first conducted. The reliability test results showed that the reliability coefficient value was 0.930, which was greater than 0.9, indicating that the reliability quality of the research data was very high.

Table 2 Cronbach reliability analysis table of this survey

Name	Corrected Total Correlation (CITC)	α coefficient with term removed	Cronbach's alpha coefficient
You think patients can complete registration and other processes very well using smart devices.	0.352	0.934	0.930
You think that patients using smart devices will help them better understand their disease.	0.627	0.926	
You think smart assistants help doctors with triage to a great extent.	0.787	0.921	
You think using smart devices to guide patient diversion improves diagnosis and treatment efficiency.	0.857	0.918	
You would recommend smart assistants to other doctors to optimize the diagnostic process.	0.812	0.920	
You feel that smart devices are not difficult for patients either.	0.701	0.924	

Name	Corrected Total Correlation (CITC)	α coefficient with term removed	Cronbach's alpha coefficient
You feel that smart devices meet the needs of patients.	0.825	0.919	
You think it would be easy for doctors to use smart assistants.	0.669	0.925	
You feel that smart assistants help doctors complete important triage work.	0.814	0.920	
Do you think other doctors would also find smart devices useful?	0.628	0.926	
You will insist on using smart devices to assist with diagnosis and treatment.	0.699	0.924	
Would you recommend others to use smart devices?	0.872	0.918	

Standardized Cronbach α coefficient: 0.931

The CITC values corresponding to some items are between 0.2 and 0.3, indicating that the correlation between them and the other analysis items is weak. If it is a pre-test analysis, this item can be corrected before collecting formal data (if it is a formal data analysis, this item can be deleted). Overall, the reliability coefficient value of the research data is higher than 0.9, which comprehensively indicates that the data reliability quality is high and can be used for further analysis.

As for the validity test, this study uses factor analysis to complete the validity analysis and conducts comprehensive analysis through KMO value, commonality, variance explanation rate value, factor loading coefficient value, and other indicators to verify the validity level of the data. Based on the analysis of the obtained data, this study comprehensively judged the validity test results of the questionnaire survey and believed that the current questionnaire survey validity results performed excellently.

Table 3 Validity analysis of this survey

Name	Factor loading coefficient			Commonality (common factor variance)
	Factor 1	Factor 2	Factor 3	
You think patients can complete registration and other processes very well using smart devices.	0.732*	-0.011	-0.045	0.538
You think that patients using smart devices will help them better understand their disease.	0.233	0.120	0.926*	0.925
You think smart assistants help doctors with triage to a great extent.	0.534*	0.575*	0.320	0.717

Name	Factor loading coefficient			Commonality (common factor variance)
	Factor 1	Factor 2	Factor 3	
You think using smart devices to guide patient diversion improves diagnosis and treatment efficiency.	0.589*	0.469*	0.522*	0.839
You would recommend smart assistants to other doctors to optimize the diagnostic process.	0.317	0.823*	0.311	0.874
You feel that smart devices are not difficult for patients either.	0.794*	0.485*	-0.041	0.868
You feel that smart devices meet the needs of patients.	0.473*	0.718	0.283	0.819
You think it would be easy for doctors to use smart assistants.	0.067	0.943*	0.161	0.920
You feel that smart assistants help doctors complete important triage work.	0.575*	0.478*	0.441*	0.754
Do you think other doctors would also find smart devices useful?	-0.091	0.515*	0.804*	0.920
You will insist on using smart devices to assist with diagnosis and treatment.	0.664*	0.230	0.394	0.649
Would you recommend others to use smart devices?	0.800*	0.293	0.478*	0.954
Eigenvalue (before rotation)	7.291	1.450	1.038	-
Variance explained% (before rotation)	60.758%	12.082%	8.647%	-
Cumulative variance explained (before rotation)	60.758%	72.839%	81.487%	-
Eigenvalue (after rotation)	3.600	3.515	2.664	-
Variance explained% (after rotation)	30.000%	29.288%	22.199%	-
Cumulative variance explained (after rotation)	30.000%	59.288%	81.487%	-
KMO value		0.535		-
Butt sphericity		149.222		-
df		66		-
p Value		0.000		-

Note: * indicates that the absolute value of the load coefficient is greater than 0.4, and ** indicates that the commonality (common factor variance) is less than 0.4.

The commonality values corresponding to all research items are higher than 0.4, indicating that the information on the research items can be effectively extracted. In addition, the KMO value is 0.535, which is less than 0.6, which means that the data is not suitable for extraction (which indirectly indicates low validity). It is recommended to delete unreasonable research items (low commonality values) and analyze them again. In addition, the variance explanation rates of the three factors are 30.000%, 29.288%, and 22.199%, respectively. The cumulative variance explanation rate after rotation is 81.487%>50%.

Table 4 Pearson correlation - standard format

	Gender	Age	Address in China
You think patients can complete registration and other processes very well using smart devices.	0.461	-0.321	0.000
You think that patients using smart devices will help them better understand their disease.	0.288	-0.268	0.194
You think smart assistants help doctors with triage to a great extent.	0.535*	-0.544*	0.282
You think using smart devices to guide patient diversion improves diagnosis and treatment efficiency.	0.436	-0.451	0.180
You would recommend smart assistants to other doctors to optimize the diagnostic process.	0.480	-0.535*	0.065
You feel that smart devices are not difficult for patients either.	0.804**	-0.788**	-0.084
You feel that smart devices meet the needs of patients.	0.660*	-0.654*	-0.137
You think it would be easy for doctors to use smart assistants.	0.502	-0.579*	-0.198
You feel that smart assistants help doctors complete important triage work.	0.701**	-0.499	0.052
Do you think other doctors would also find smart devices useful?	0.213	-0.371	0.072
You will insist on using smart devices to assist with diagnosis and treatment.	0.711**	-0.718**	0.239
Would you recommend others to use smart devices?	0.659*	-0.662**	0.258

* $p < 0.05$ ** $p < 0.01$

In the analysis process, this study mainly used the correlation analysis method to analyze the correlation between gender, age, region, and questions, a total of 12 items and used the Pearson correlation coefficient to express the strength of the correlation. Specific analysis shows that: there is significance between gender and all six items. The correlation coefficient values are 0.535, 0.804, 0.660, 0.701, 0.711, 0.659 respectively. All are greater than 0, which means that among the six items of gender, There is a positive correlation. All of the correlation coefficients between age and 7 of them are significant. The correlation coefficient values are -0.544, -0.535,

-0.788, -0.654, -0.579, -0.718, -0.662. All are less than 0, which means that age and There is a negative correlation between these seven items. At the same time, there is no significance between age and five of the items, and the correlation coefficient value is close to 0, indicating that there is no correlation between them. There is no significance between the region and all 12 items. The correlation coefficient values are 0.000, 0.194, 0.282, 0.180, 0.065, -0.084, -0.137, -0.198, 0.052, 0.072, 0.239, 0.258 respectively. , all are close to 0, and all p-values are greater than 0.05, which means there is no correlation between them.

4.2. Qualitative research results: based on non-participant observation of Peking Union Medical College Hospital App

Non-participant observation, also known as outsider observation, refers to an observation method in which the observer is outside the object being observed and does not participate in its activities or affect it. This method has been fully valued and valued in the field of health communication. Utilization (Peng Yingchun et al., 2012; Luo Chunyan et al., 2019). Based on the number of users and the construction level of smart hospitals, this study selected the Peking Union Medical College Hospital mobile app as the research object, collected and analyzed user comment information, and conducted detailed non-participatory observations on clinic fees, electronic prescription orders, and patient feedback.

In the process of non-participant observation, the researcher is considered to appear as an "outsider", not affecting the normal activities of the hospital, nor intervening in the construction and communication of the doctor-patient relationship. Adhering to the principles of "non-participation" and "non-intervention", this study conducted a total of 30 days of non-participant observation on several users of the Peking Union Medical College Hospital mobile app. The observation period was from December 2023 to June 2024. A single observation period is 10 days, with an interval of about 2 months each time, from December 1 to 10, 2023, March 1 to 10, 2024, and June 1 to 10, 2024.

According to the non-participatory observation results of this study, this study found that: First, the function settings of the Peking Union Medical College Hospital mobile app are clear, including self-service payment, prescription query, surgery query, hospitalization medical record filing, physical examination appointment and report query, reverse car search, etc.; Second, the surgical status information is synchronized offline and online; the patient's family can learn about the progress and status of the operation through the App in the waiting room, without relying entirely on the electronic screen in the surgical waiting room; Third, real-time query of medication information and physical examination reports, drug contraindications and dosage, usage, and dosage can be queried with the help of smart terminals, and the reasons can be understood at the same time; Fourth, the self-service update of medical record information makes the interaction between the medical record department and patients more intelligent and convenient, and the efficiency is significantly improved.

This study believes that intelligent media assists the shortcomings of the traditional doctor-patient relationship and connects doctors and patients through media. For example, when applying for hospitalization, patients and their families often fill in the information in a hurry because they are eager to see a doctor, resulting in inaccurate information content, but after the intervention of landscape intelligent media, this situation has been significantly improved. "One-click appointment" actually realizes the reconstruction of the doctor-patient relationship and provides strong support for the creation of a new doctor-patient relationship. Based on the results of non-participatory observation, this article believes that the establishment of a new doctor-patient relationship is inseparable from the empowerment of intelligent technology.

5. Findings

5.1. Intelligent consultation: Improving the efficiency of doctor-patient communication needs to be coordinated with improving satisfaction

Intelligent consultation, in terms of its concept, is a product of the embedding of intelligent media into the diagnosis and treatment process. In terms of patient experience, MedQA (Medical Question Answering), a question-and-answer system of traditional retrieval technology used in the intelligent consultation process, has released the active role of technology in multiple dimensions. The improvement of doctor-patient communication efficiency depends on the embedding of smart technology (Du Zengzhen et al., 2022). Regarding the way to improve the efficiency of doctor-patient communication, according to the non-participatory observation results of this study, the convenience of changing health check-up appointments has effectively improved the patient's experience. At present, individual and group physical examinations at Peking Union Medical College Hospital can be directly booked with the help of an App. The operation is simple, and the "mobilization" of convenient services promotes the improvement of patient medical efficiency.

Improving patient satisfaction is the focus of intelligent consultation. Consultation is traditionally done manually, and patients have to wait in line for a long time. Artificial intelligence has helped to improve efficiency. The review of electronic medical records is divided into different levels, and hospitals of different levels implement differentiated management systems. Electronic medical records have been implemented for graded evaluation since 2011 and became a "hard indicator" for hospital assessment in 2019. The list includes hospitals of different levels, including level 7, level 6, and level 5. The application of electronic medical records helps to improve medical quality and safety, obtain complete patient diagnosis and treatment data more quickly, and patients can also have a more convenient medical experience, which meets the requirements of the "Beijing Action Plan to Accelerate Collaborative Innovation in Medicine and Health" issued in May 2024.

5.2. Smart medical treatment: The application of "off-site follow-up" and "cloud consultation" is becoming more and more popular.

How is smart medical treatment achieved? During the non-participatory observation conducted in this study, Beijing citizens were further empowered by smart tools when they went to Peking Union Medical College Hospital for medical treatment. For example, parking matters at the hospital: in the underground garages of the emergency building and the surgical building of the hospital, the "indoor navigation" function of the "hospital navigation" in the Peking Union Medical College Hospital App will automatically record the patient's real-time location. After returning, click the "My parking space" option to find a parking space according to the navigation after the medical treatment.

When it comes to "off-site follow-up", it generally refers to insured persons from different pooling areas holding social security cards or medical insurance electronic certificates to be hospitalized, receive ordinary outpatient medical treatment, purchase medicines, etc. in designated medical institutions in other places, which are deemed to have completed the registration procedures for medical treatment in other places and can directly enjoy medical insurance reimbursement. After the intervention of smart devices, the realization of "cloud consultation" becomes possible. For example, from reviewing medical records to video calls, on-site examinations, and finally issuing diagnosis opinions, the intelligent "cloud consultation" realizes the barrier-free transmission and sharing of medical imaging data in the cooperation area, allowing patients to enjoy high-quality ophthalmic diagnosis and treatment and one-stop diagnosis and treatment services without leaving home.

5.3. Smart follow-up: Data interconnection and interoperability of medical information in the construction of smart platforms

In the smart follow-up link, the use of electronic prescriptions is an important credential. Before the intervention of smart devices, patients often fell into difficulties because of accidentally losing prescriptions; after the intervention of smart devices, patients can easily find prescriptions and complete the administration of drugs according to the medication instructions. During the non-participatory observation process of this study, patients can use electronic prescriptions to check the dosage and usage of drugs at any time and clearly understand the name, dosage, usage, and dosage of drugs.

In hospitals in megacities, the construction of smart platforms depends on the construction of a new medical service system. For example, Xuhui District, Shanghai, strengthens the linkage of tertiary medical institutions to create a functional, humanized, and intelligent medical service system. Xuhui District, Shanghai currently has two regional medical centers, namely Xuhui District Central Hospital and Shanghai Eighth People's Hospital. It is reported that the district focuses on "strengthening the waist and standing on the ground" in medical services. Strengthen the teaching alliance of Zhongshan Hospital Medical Union, comprehensively benchmark Zhongshan Hospital, and strengthen the homogeneous management of education and teaching. In the new round of the construction cycle of the medical alliance, Xuhui District Hui Center Hospital will continue to focus on the goal and task of a "first-class regional medical center", relying on the superior medical resources of Fudan University, Shanghai Medical College and Zhongshan Hospital, and effectively promote the high-quality and sustainable development of the hospital.

Compared with the other hospitals in China, West China Hospital of Sichuan University and Huashan Hospital of Fudan University might pay more attention to the application of AI robots, as Fudan did not focus on this area. Through the participatory observation, this paper revealed that the surface of AI applications in different hospitals shared many similarities, as it showed that the smart hospital construction may depend on its development of technology. In a word, the smart hospital kept pace with the improvement of AI technology, while it gave birth to the flourishing of human-machine communication.

6. Conclusion

With the continuous advancement of smart hospital construction, hospitals in many parts of my country have actively promoted the construction of smart hospitals, and have adopted the method of embedding smart media in digital terminals to help patients accurately grasp medical information and promote patients to flexibly understand the dynamics of diagnosis and treatment. To further build a new doctor-patient relationship, smart media technology is deeply embedded in the construction of smart hospitals, which not only promotes the reconstruction of the doctor-patient communication paradigm at the technical environment level but also participates in the construction of a new doctor-patient relationship at the doctor-patient relationship level. Based on the judgment of the construction of smart hospitals, this study believes that the construction of a new doctor-patient relationship depends on technology empowerment, and the assistance of smart media solves the logical starting point problem of the doctor-patient contradiction.

In specific medical practice, the assistance of smart media technology helps patients recommend personalized diagnosis and treatment plans, and tailors medical plans suitable for patients, to make medical treatment for marginal groups more convenient and intelligent. This article believes that in the future construction of smart hospitals, smart devices will play a role in the construction of new doctor-patient relationships in multiple dimensions, further

empowering the construction of new doctor-patient relationships while reconstructing the media ecology and technical environment.

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