The Influence on Medical Activities by Mobile Medical Application

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*Abstract-*Various mobile medical APPs appear designed for mobile smart phones in China recent years, providing more approaches between patients and doctors. It offers more convenient and prompt medical information and service exchange. Though there still exist some unfavorable factors, mobile medical application improves patient medical experience, the relationship between doctors and patients, the doctor's self-price value and contain the huge commercial value. In the future, as the improvement of the laws and regulations, the increasing of the market competition and advancement of technology, it will change the medical pattern completely, especially for out-patients.

Keywords-Mobile Medical Application; Doctor-Patient Relationship; Medical Activities

I. Introduction

With more popularity of smart phones in China, mobile phone APPs get into the daily lives of the smart phone owner. After appearing of the medical APPs, medical activities carried out by the mobile phone is called mobile medicine [1]. As a kind of new things, mobile medicine has brought huge changes to ordinary patients, medical doctors and doctor-patient relationship and so on. And a coin has two sides, there also existed some unprecedented problems.

II. Mobile medical application develop rapidly

With the rapid development of China Mobile Internet technology, a wide variety of mobile medical APPs appear designed for mobile phones, which provide patients more convenient and prompt medical information and service exchange. The 2012 - 2013 China Mobile medical market annual report shows that China Mobile medical market size reached 1,860,000,000 Yuan in 2012, an increase of 17.7% over the last year. And Iimedia research predicts that China Mobile medical market size will reach 12,530,000,000 Yuan in 2017[2].

At present, the numbers of domestic mobile medical APPs are over 2000. According to the function, they could mainly be divided into four groups: pharmaceutical products application providers, such as some online pharmacy sales platform; applications designed for medical professionals, which including query of professional information and medical reference data, such as a variety of applications from domestic well-known medical website DXY, for example, Tumor Time and Cardiovascular Time; applications satisfying the demand of patients, as well as the

Haodf mobile application, Chunyuyisheng application; applications from well-known hospitals for the appointment registration and medical guide, consultation and review services platform, such as Peking Union Medical College Hospital online registration platform, Xijing Hospital online registration platform.

Primarily, the application satisfying the demand for patients is on the top of download list. Today, when the health and medical information could be more easily gotten on the Internet, the further requirement of patients is direct communication and information exchanges with professional doctors or well-known experts.

III. The advantage and value of mobile medical APPs

Due to medical referral system in China is not perfect, the majority of patients do not go to small or medium-sized hospitals but larger them [3]. Such as Asia's largest hospital - the First Affiliated Hospital of Zhengzhou University is the product of this specific situation.

In this process, outpatient services have become one of the most difficult and painful experiences for patients [4]. Therefore, applications easing the demand for patients are the part of the solutions to this painful problem. For example, our hospital is the fifth comprehensive hospital on the national ranking list. The number of daily outpatient service of the breast surgery is more than 300 persons, on average every doctor has to inquire 100 at least, and each patient's visiting time is less than 10 minutes. For those high disease-incidence majors, this situation is more severe. It is one of the primary causes of medical disputes now. On the contrary, mobile medical applications for patients make another alternative, in which patients can raise questions at any time, and a specialist answer within a few minutes. For example, the application of the Chunyuyisheng said that they have invited more than 200,000 doctors registered, the daily average number of inquiry-answer has reach more than 110,000 times [5]. Patients can not only ask the experts in Beijing in the morning, but also to the experts in Shanghai at afternoon. These applications allow patients who stay at home to be able to complete inquire procedure, which could not have finished in large hospital at cost of one whole day time.

In addition to improving the patient's medical experience, the flexibility of mobile medical applications

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has improved the relationship between doctors and patients. In real world, the doctor has to complete the inquiry from a large number of patients in limited outpatient time and make prescription or treatment plan. Therefore, the nice doctor-patient relationship could be nothing but mission impossible, which often lead to medical complaints. However, the mobile medical application occupies the doctor's spare time, which may be the gap between two operations, off work hours and so on, the doctor has sufficient time to answer questions, and also can choose the question of interest to answer. After the reply, the doctor may be back into operation again, the follow-up of the patient's questions can be answered after surgery. Even if this doctor did not answer in time, there will be another doctor of the same profession to reply. Questions raised by the patient can be answered certainly; hence, the patient's feeling is relatively calm. Secondly, most of mobile medical applications are Invitation registration, for example, Chunyuyisheng application only select large hospitals attending and above level doctors, all doctors must be strictly certificated to ensure the doctor's authenticity and professionalism. Thirdly, patients can choose any doctors online to answer his question, based on patient's degree of satisfaction, doctor's work units, education background and so on. With experienced specialist joining and patient's choice privilege obtaining, the patient's satisfaction of the online inquiry is much higher than that of outpatients in real clinic.

Mobile medical applications also create jobs for the enterprise, improve the doctor's economic income. The cost of outpatient registration in large hospitals generally from 1 Yuan to 10 Yuan that cannot reflect the value of medical labor yet. However, the medical mobile applications can custom inquiry fees by doctors themselves, ranging from 50 Yuan to 200 Yuan and even higher. This greatly improves the enthusiasm of doctors. According to Iimedia research's 2012-2013 China Mobile medical market annual report, data show that the market size of mobile medical conventional services reached 1,130,000,000 Yuan in 2012; mobile service (only referring to the online auxiliary diagnosis) of the market size reached 220,000,000 Yuan, treatment services (excluding admission treatment) market size reached 170,000,000 Yuan. Iimedia research also expects that the market size of mobile medical conventional services will reach 7,340,000,000 Yuan by 2017.

IV. The disadvantage and dilemma of mobile medical APPs

Although in big cities, the popularity of smart phones has been very high. However, in the middle of the elderly population, as well as rural areas, the popularity of smart phones and mobile medical applications is still undeveloped. Especially for the low educated groups, it is impossible that they could use medical applications to complete the inquiry online. Secondly, the traditional concept of health consulting also has a certain bound to the development of mobile health. In ordinary people's impression, only laboratory examination and prescription need to spend money, however, other medical activities,

such as answering questions, consulting treatment plan, explaining the results of the examination and so on, should not be charged or just low fees [6]. These realities and opinions have limited the further development of mobile medicine.

Doctors in large hospitals are very busy, which also affect the professional level of interrogation by medical application. The larger the hospital is, the more limit of time the doctors have, especially those national famous experts, the schedule is full of conference and medical activities, who is afraid of not having time to answer questions online. The majority of doctors who registered on mobile medical application should be younger. Objectively, it could impair the professional level of inquiry. Secondly, the process of the online question and answer is virtual, thus, it cannot avoid that the possibility of a young doctor or a graduate student instead of a registered doctor to answer questions. Thirdly, due to low educated level of some patients, there also exist some situations that the interrogation process delays the disease even the treatment. And it leads to low level, repeated interrogation, the waste of medical resources.

Now, the State supports Internet +, which promotes the development of mobile medical applications. However, in the early stages of development, the relevant laws and regulations lack, and the appearing of more than 2000 applications with similar function, resulting in the vicious competition for the registered medical practitioners and patients. And, in most cases, the lack of specific characteristics of these applications, the homogenization is serious. Too many-repeated registration wasted the doctors and patients' too much energy and time.

Despite the mobile health has a promise perspective, but it is still lack a clear business model in China. According to foreign mobile medical APP, the source of profit is mainly from insurance, hospitals, doctors, pharmacies, patients and other paid objects. For example, ZocDoc is an online doctor appointment in the United States, according to the location, insurance status and medical professionals to recommend and book doctor. ZocDoc 's business model is free for patients and a paid service for doctors. According to the number of doctors announced by ZocDoc, its annual income should be more than 10 million dollars. WellDoc focus on chronic disease management, its flagship product is the diabetes management platform, patients can use the mobile phone to record and store blood glucose data, and the company mainly takes the charge from the insurance company. However, compared with the United States mature business model, China's medical system is still in the prologue. Therefore, mobile healthcare application mainly fees from patients at present, even own subsidize. In this way, parts of low-income patients are excluded from the mobile health, which is neither fair nor stable. Further, the subsidy cannot be sustained for long time; mobile health will also face many challenges during the exploration of the commercialization process.

V. Conclusion

As a new Internet infant, mobile medical application has a huge prospect. Although there still exist some concerns, such as traditional value concept, virtual interrogation being difficult to guarantee the quality, profit model being

unpredictable etc., in order to improve patient's medical experience, the relationship between doctors and patients, the doctor's self-price value and containing the huge commercial value, mobile medical application is an indeed potential direction. In the future, as the improvement of the laws and regulations, the increasing of the market competition and advancement of technology, it will change the medical pattern completely, especially for out-patients.

VI. ACKNOWLEDGMENT

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