PERCEPTION OF DOCTORS ON THE ACCEPTANCE AND USE OF TELEMEDICINE

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ABSTRACT: *Telemedicine in India is playing a very challenging role in health care sector and health care programs are practiced to improve the health care accessibility in remote areas. The number of hospital visits wasting the time of doctors and increasing the cost for patients. Hence it is time to find the technology enabled substitutes to improve the optimization of health care services. In India there is a scarcity of qualified health/medical professionals; the doctors and nurses ratio also found to be 0.7 and 1.5 per 1000 people respectively when it is expected to be 2.5 for both doctors and nurses respectively as per the WHO (Deloitte Report, 2015 and WHO Report, 2015). There is a misdistribution of medical resources with a high concentration in urban areas resulted in the low accessibility of healthcare for rural and remote population. Hence, examining the perception of doctors in the acceptance and use of telemedicine from Indian context found to be the apt to improve healthcare services. Hence, the acceptance and use of telemedicine was tested by measuring the performance expectancy, effort expectancy, social influence on behavioural intention as well as the facilitating conditions and behavioural intention influence on usage behaviour (Anne Kohnke et al., 2014).*

KEY WORDS: *Doctors, Perception, telemedicine, acceptance, behavioural intention, usage behaviour*

INTRODUCTION

In the Middle Ages medicine was dominated by the ideas of Galen and the theory of the four humors. Medieval doctors were great believers in bloodletting. Doctors also prescribed baths in scented water. They also used salves and ointments and not just for skin complaints. Doctors believed it was important when treating many illnesses to prevent heat or moisture escaping from the affected part of the body and they believed that ointments would heal that. Astrology was also an important part of medieval medicine. Doctors believed that people born under certain zodiacal signs

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were more susceptible to certain ailments. In the middle ages only monasteries had sanitation. Despite the lack of public health many towns had public bath-houses were you could pay to have a bath. From the mid-14th century the church allowed some dissections of human bodies at medical schools. However Galen's ideas continued to dominate medicine and surgery. In the early 21st century new types of transplant were performed. In 2005 the first face transplant took place. Then in 2011 the first leg transplant was carried out. Finally in 2012 the first womb transplant was carried out. At present e-health services like Electronic Health Records, Clinical Decision Support, Telemedicine, Consumer Health Informatics, Knowledge management, m-Health and Health Care Information Systems are becoming prominent. After independence during the first five year plan (1951-56) of India the state of public health is reflected in the wide prevalence of disease and the high rate of mortality "in the community as a whole and in particular among vulnerable groups such as children and women in their reproductive age period. A large part of this represents preventable mortality. The infant mortality rate is of the order of 127 per thousand live births. According to the Deloitte report of 2015, in terms of infrastructure India has only one bed for every 1050 patients and yet it accounts for 100000 beds at present decade with an investment of about $50 billion. So the health care services will improve through the adoption of telemedicine which would help to effectively do timeliness delivery of health care services.

HEALTHCARE SECTOR IN INDIA AFTER INDEPENDENCE

After independence during the first five year plan (1951-56) of India the state of public health is reflected in the wide prevalence of disease and the high rate of mortality "in the community as a whole and in particular among vulnerable groups such as children and women in their reproductive age period. A large part of this represents preventable mortality. The provision for the medical and public health plans of the Central and State Governments amounts to Rs.99-55 crores of which the Centre's share is about Rs. 17-87 crores.The maternal mortality of India is very high and is estimated at 20 per thousand live births. Maternal morbidity is also very high being nearly 20 times the mortality. The infant mortality rate is of the order of 127 per thousand live births. The corresponding rates in progressive countries are very low and have been achieved by concentrated effort on the improvement of the health of the mother and child. In rural areas the present trend is to provide integrated curative and preventive health services and to organize them on the basis of health centres of different grades. It is estimated that in 1951 there were 8,600

medical institutions in the country with about 113,000 beds; in 1955-56 the number of institutions may be about 10,000 with about 125,000 beds. These figures represent an increase during the first plan of 16 per cent in institutions and of 10 per cent in beds. At the end of the second plan the number of institutions is likely to be about 12,600 and the number of beds about 155,000, providing thus for an increase of about 26 per cent in institutions and of about 24 per cent in hospital beds. The plan provides about Rs. 43 crores for augmenting and improving hospital services, including staff, accommodation, equipment and supplies. At the end of the Second Plan there were nearly 4500 maternity and Child Welfare Centres, each serving a population varying between 10,000 and 25,000. One third of these centres are located in urban areas. The organisation of services and supplies by rural and urban centres and the compensation for sterilisation and IUCD will involve an expenditure of Rs. 269 crores. Efficiency in these services can be ensured only with a minimum network of centres and sub-centres all over the country and with more intensive attention to hospitals with a large number of maternity cases and to populous districts. The family planning programmes will be carried forward in an integrated manner along with Health, Maternity and Child Health Care and Nutrition services on the basis of the strategy outlined in the draft Fifth Plan. In the sixth five year plan the life expectancy at birth has gone up from about 32 years as per 1951 Census to about 52 years during 1976—81. The infant mortality rate has come down from 146 during the fifties to 129 in 1976. The health infrastructure has been strengthened. The country has about 50,000 sub-centres, 5,400 primary health centres including 340 upgraded primary health centres with 30 bedded hospitals, 106 medical colleges with admission capacity of 11,000 per annum and about 5 lakh hospital beds. The per capita expenditure on health incurred by the State has gone up from about Rs. 1.50 in 1955-56 to about Rs. 12 in 1976-77. The doctor population ratio though satisfactory on an average in the country (1977), varies widely from 1 doctor for 8333 in Meghalaya to 1 doctor for 1400 in Delhi. The bed population ratio has also improved but varies widely in urban and rural areas. Full coverage of the backlog of primary health centres and sub-centres buildings were also contemplated in the Fifth Plan.

The objectives for 2000 AD are establishing one primary health centre for every 30,000 population or 20,000 in tribal and hilly areas and one sub-centre for every 5,000 population. As against the earlier policy of setting up a 30 bedded rural hospital by upgrading one out of 4 primary health centres, a community health centre will be established for a coverage of 1 lakh population with 30 beds and specialised medical care services in gynaecology, paediatrics, surgery and medicine. During the Sixth Plan was the adoption of the National Health Policy by both Houses of Parliament. Health

Care Programmes were restructured and reoriented towards this policy. Priority was given to extension and expansion of the rural health infrastructure through a network of community health centres, primary health centres and sub-centres, on a liberalized population norm. Efforts were made to develop primitive and preventive services, along with curative facilities. High priority was given to the development of primary health care located as close to the people as possible. Eight plan concentrated on reaching health facilities must reach the entire population. The Health for All (HFA) paradigm must take into account not only high risk vulnerable groups, i.e., mothers and children, but must also focus sharply on the underprivileged segments within the vulnerable groups.

The Health Survey and Development Committee, headed by Sir Joseph Bhore recommended establishment of a well-structured and comprehensive health service with a sound primary health care infrastructure. This report not only provided a historical landmark in the development of the public health system but also laid down the blueprint of subsequent health planning and development in independent India. During the tenth five year plan the major objectives are Reduction in fertility, mortality and population growth rate. The Eleventh Five Year Plan will provide an opportunity to restructure policies to achieve a New Vision based on faster, broad-based, and inclusive growth. One objective of the Eleventh Five Year Plan is to achieve good health for people, especially the poor and the underprivileged. In order to do this, a comprehensive approach is needed that encompasses individual health care, public health, sanitation, clean drinking water, access to food, and knowledge of hygiene, and feeding practices. As on 1st March March 2011, Indian population was 121 crore, out of which 83.3 crore(68.84%) live in rural areas while 37.7 crore(31.6%) live in urban areas, as per census of India. According to the Deloitte report of 2015, the estimation of expenditures allotted to this sector is five percent of Gross Domestic Product (GDP) in 2013 and it is anticipated to remain stable till 2016. In terms of infrastructure, India has only one bed for every 1050 patients and yet it accounts for 100000 beds at present decade with an investment of about $50 billion. And it also lacks in qualified medical professionals to efficiently diagnose the diseases through proper delivery of services. The report states that, doctor-patient ratio is considerably lower in India than World Health Organization statistical report the ratio of India is about 0.7 doctors and 1.5 nurses per 1000 people which is comparatively lower than 2.5 doctors and nurses per 1000 people. As there is a scarcity of doctors and nurses in India, opting for traditional method of services is seem to be not effective and difficult for patients to access to it.

STATEMENT OF THE PROBLEM

As on 1st March 2011, Indian population was 121 crore, out of which 83.3 crore (68.84%) live in rural areas while 37.7 crore (31.6%) live in urban areas, as per census of India. The access of healthcare services is not yet achieved fully in many developing countries, even though it is guaranteed for all people throughout the world. As per the Deloitte report of 2015, there is a lack of qualified medical professionals to efficiently diagnose the diseases through proper delivery of services. The report states that, doctor-patient ratio is considerably lower in India than World Health Organization statistical report the ratio of India is about 0.7 doctors and 1.5 nurses per 1000 people which is comparatively lower than 2.5 doctors and nurses per 1000 people. As there is a scarcity of doctors and nurses in India, opting for traditional method of services is seem to be not effective and difficult for patients to access to it. So use of telemedicine can help to overcome the barriers in effectively delivering health care services. This study aims to overcome the barriers by employing UTAUT model in use of telemedicine equipment by doctors.

RESEARCH QUESTIONS

1. What is the relation that the performance expectancy, effort expectancy and social influence have on behavioural intentions and relationship of facilitating conditions on usage as well as the impact of behavioural intention on usage from doctors' perspective?

RESEARCH OBJECTIVES

1. To elucidate the effect of Performance Expectancy, Effort Expectancy and Social Influence on Behaviour Intention.
2. To explicate the effect of Behavioural Intention and Facilitating condition on Usage behaviour.

REVIEW OF LITERATURE

Anson O (1989) studied on gender differences in health and pattern of health services, and revealed that in developed countries women were utilizing almost all health services than men and also identified barriers to access to primary health care. Moore (1996) study revolved around the telemedicine challenges and categorized as professional practice (licensure and liability), quality of care and financial issues

like reimbursement restrictions and payment procedures. Purcell (1998) defined telemedicine as "consultative, diagnostic, or other medical services delivered via telecommunications technologies to rural or underserved public, not-for-profit hospitals, and primary health care facilities in collaboration with an academic health center and associated teaching hospitals or territory center. Institute of Medicine to develop a framework for evaluating telemedicine is "the use of electronic information and communications technologies to provide and support health care when distance separates the participants". Siriginidi Subba Rao (2001) discusses about integrated healthcare and telemedicine conceptually and made his focus towards examining the impingement of information technology on medicine and health care. Initiated a new concept on integrated health care information system and provides brief insights on its functions and advantages, and describes about telemedicine, its origin, the scope for the topic, benefits and also portrays its use towards telemedicine and tele endoscopy and so on. Lynne P. Baldwin et al., (2002), investigates the challenges entail in human communication and illustrates how the information technology enriches the interactions between patients and among who were engaged in their health and finds out there is a difference in treating patients by doctors, specialists and consultants. In traditional method, they will treat the patients with extreme care and in this study they act as advocates. H. Joseph Wen and Joseph Tan (2002) studied about the opportunities and challenges of evolving telemedicine and E-health. It was identified that many e-health websites were facilitating health education and information but not delivering healthcare services to patients of geographically dispersed people. When compared to 1990s the availability and usage of internet has been changed enormously and now it became part of our life and became necessity as a telephone and stapler. A survey was conducted to find out the future prospects of e-commerce opportunities available to telemedicine and e-health services from the point of healthcare providers, vendors, patients and insurers. One of the benefits through telemedicine and online medication was bringing the price of elective surgeries and assisting the consumers in their decision making. Technology expansion and maturity will increase the choices to consumers and will become personalized according to the patient's history and situation. Finally it was identified that e-health technologies will benefit the consumer.

Patrick Y.K chau and Paul jen-hwahu (2004) explained the technology implementation for telemedicine programs which highlighted the important issues and common pitfalls in telemedicine technology implementation. The telemedicine is using the advanced technologies to exchange medical information allowing for the provision of health care services across geographic, temporal, social, and

cultural barriers. A prominent focus of Hong Kong telemedicine programs has been the achievement of vertical integration of patient care and management services, particularly the collaboration between secondary and tertiary care providers with regard to consultation or patient assessment and management. Telemedicine is the ultimate solution for long standing solution in the healthcare field. United Nations (2005) reported that including indigenous women, urban women had much better access to health services than rural women. Benjamin Nagy (2006) revealed that traditionally telemedicine was used to treat prisoners, soldiers and homeless for transcend problems like distance, location etc. but now it is being carried to chronic conditions for cutting healthcare costs through reduction in hospital stays and outpatient clinic visits and providing better quality outcomes. Telemedicine found hard to reach population in its initial days but later it was expanded to home and workplace by sharing the data virtually and through store and forward methods. Treating a patient remotely is really a great thing but unless electronic health records or patients record it is very crucial. Infrastructure is an important issue relating to telemedicine, the US telecommunications network itself cannot handle the volume of image data or video transmitted and it need to have broadband deployment and revealed that they are far behind countries like Japand and Korea. S.K. Mishra et al., (2007) examined the role of telemedicine in promoting Indian healthcare, economic growth and health insurance. Even though Bio-medical, Medical and the Information Communication Technology (ICT) fields have advanced in India the cultural and geographical diversity enables wide disparities in healthcare accessibility among people with different income. It is the wish of all the health care administrators that even the rural areas are administered basic health care. Further compounding factors like low paying capacity, lack of investment, inadequate facilities, retaining doctors are faced. It is to be noted that most of the patients come from the rural areas yet only 2% of consulting doctors' work in rural areas, whereas 75% work in urban centers. A Hospital bed per thousand people is 0.19 in rural areas and 2.2 in urban areas. These economic disparities will be eradicated with telemedicine. It is more than technology. Telemedicine can change the national health care system by extending its services to every village using satellites and information technology. The problems faced to achieve this include initiation of the telemedicine network, misconceptions, pilot study, lack of legal framework, etc.

Archie Lockamy III and Douglas L. Smith (2009) studied on the influence of economic, regulatory, political, technical, cultural and social environment under which healthcare organization need to operate. Even though telemedicine has potential to deliver and improve the efficiency of healthcare services, it needs

to address many challenges. Future researchers to further explore the strategic deployment of telemedicine toenhance healthcare-delivery processes and patient satisfaction. The author tried to establish a theoretical framework in designing and deploying of negative intentions towards telemedicine projects which benefits the organization with strategic advantages and found that, it is used as a process enabler for ameliorating health care service delivery systems which effects in augmenting patient satisfaction and value. The study finds out five principles namely strategic alignment, process, project, and performance management. Further research can be done to discover the ideas to determine the impingement of patient satisfaction and performance of health care delivery systems.

RaminKarim and Peter So-derholm (2009) explored the transferability of information communication system for providing support information services for e-health services and eMaintenance. Reem Al-Attas et al (2012) studied about different ways of applying telemedicine for home based healthcare as its importance increasing among patients and society. Despite some surveys focusing on medical devices interoperability used on home-care systems, electronic measurements in rehabilitation, configuration of body area networks, a survey and taxonomy of enabling technologies for tele-home-care systems does not exist. This paper presents a survey and taxonomy of the design approaches. The discussion of open issues and suggestions for further research are detailed in this paper. In this article, an overview of tele-home-care systems services framework. We have identified four core services of tele-home-care systems. The aim here is to map the technologies and the approaches followed by the research community to full fill these services and later draw a taxonomy classification based on these approaches. Below are the details of such services. This paper provided a survey and taxonomy for tele-home-care systems. As it has shown, the current technology is revolutionizing the concept of remote healthcare. But, there are several challenges and issues that need to be resolved for tele homecare to be fully accepted by the patients.

We have summarized these challenges and provided suggestions for further research. Our plan for the future is to extend this work to include aspects of new technological advances, discuss maturity level, evaluation, and the extent to which tele-home-care systems use intelligent features and decision support mechanisms. M.C. Batistatos et al (2012) explained that Mobile telemedicine for moving vehicle scenarios: Wireless technology options and challenges. This paper looks into the case of mobile telemedicine service provision in a moving vehicle (ambulance). The special characteristics and requirements of this operational scenario are discussed in terms

of benefits and limitations in conjunction with the application of existing wireless communication systems in this case. Moreover, emerging wireless broadband communication systems and spectrum access technology are considered in the same context, in an attempt to further improve service provision and face future challenges. A very promising and fast growing area is the mobile tele- medicine, i.e. the use of wireless communications technology for medical service delivery (Xiao and Chen, 2008). Recent advances in wireless communications networks, lead the way to direct and flexible healthcare to patient cases that could not be efficiently served with the traditional wired communication systems.

Parvin Timothy Bickmore et al., (2013) examined the clinical staff perception on the adoption of technology for healthcare services. Professionals seem to be afraid of technology due to an assumption that technology will replace them, so resisted the technology. Linda E.moody et al (2014) examined the nurses' preferences for electronic documentation of clinical data and to find modifications to the electronic health records system. It was found that the nurses' attitude towards improving the medical documentation was positive. Anne Kohnke et al (2014), proposed to conduct further research to identify the reasons behind not utilizing the telemedicine equipment by clinicians and patients. The behavioural intention of patients and clinicians differs in use of telemedicine equipment. Haley Ayatollahi et al (2015) examined the perception difference among different groups of doctors' on adoption of telemedicine technology. It was identified that most of the doctors have very little knowledge about telemedicine and used only at some extent. Future research has to be done for a larger population to get the better results about what is the doctor's perception towards telemedicine technology. Mullen-Fortino et al., (2015) investigated the attitudes and perceptions of crucial care nurses to use telemedicine in critical area.

From all the above, it is evident that currently the presented technologies can only partially support the mobile telemedicine application in a moving emergency unit either due to technical constrains (earlier systems) or lack of maturity (recent systems). Furthermore, the technologies that show good performance in specific operational conditions (e.g. ambulance in dense rural areas) may have problems under other conditions (e.g. high mobility). Therefore, the most viable solution would be to adaptively combine wireless and wired technologies for ubiquitous end-to-end cost effective mobile telemedicine system. Near-future 4G and far-future 5G (Janevski, 2009) net- works, with a service-centric and a user-centric network concept, respectively, promise to integrate and exploit these emerging technologies providing simultaneous access to multiple wireless networks. In this context, although issues of

interoperability emerge along with proper prioritization and scheduling policies, the user will be able to change networks transparently, depending on the propagation conditions and service requirements, aiming at an optimum and seamless transmission.

Thus, basing on the previous studies, the following hypotheses are developed to know the doctors' perception on the determinants of behavioural intention and usage behaviour of telemedicine.

$H_{01:}$ There is a significant effect of Performance Expectancy, Effort Expectancy and Social Influence on Behaviour Intention.

$H_{02:}$ There is a significant effect of Performance Expectancy, Effort Expectancy and Social Influence on Behaviour Intention.

METHODOLOGY

The main purpose of the study is to determine the doctor's perception on the effect of performance expectancy, effort expectancy and social influence on the behavioral intention as well as the effect of behavioral intention and facilitating conditions on the usage behaviour (likely to use) of doctors in using telemedicine. The type of research employed here is causality and the target respondents were doctors. The questionnaire was adopted (Venkatesh et al., 2003) to test the UTAUT (Unified Theory of Acceptance and Use of Technology) Model from Indian telemedicine context. As the existing model and instrument was adopted in the new context; the required domain delineation, face validity, content validity, criterion validity was carried out to confirm the instrument validity. A pilot study was conducted to check the ambiguities and communication errors with a limited sample of 51 doctors. Out of the total 284 government doctors, 155 medical officers, 1413 of a non-profit hospital doctors and many more MBBS degree qualified doctors of Vellore District, the Questionnaire is administered to 770 doctors and we could able to receive only 537 filled questionnaires / responses, which comprised the sample of our study. The instructions were given by the interviewer to fill the questionnaire. The instrument consists of two parts, Part I consists items of demographic factors and part II consists of UTAUT model items; the perceptions of doctors were measured on a five point Likert scale ranging from 1-strongly disagree to 5-strongly agree. The items were tested through item-to-total correlation and all items' secure are above 0.30 with reliability score of 0.923. To analyze demographic profiles of the respondents, descriptive statistics were used, to find out the doctor's priority in their responses, mean analysis was carried out and ranked. To test the hypothesis and measure the

cause and effect regression was carried out using structural equation model and to find out the multicollinearity, tolerance level and VIF were considered.

ANALYSIS

TABLE 1. Doctors' Profile

	Characteristic	n	%
Gender	Male	168	31.3
	Female	369	68.7
Age	20-25	473	88.1
	26-30	45	8.4
	31-35	10	1.9
	36-40	9	1.7
Experience	0-5	509	94.8
	6-10	10	1.9
	11-15	9	1.7
	16-20	9	1.7

Source: Primary Data

Table 1 shows the details of demographic variables of doctors. The variables included in the study are gender, age, and experience. Out of the total 537 respondents 68.7% are female doctors, out of the total respondents 88.1 per cent of doctors are in between the age group of 20 to 25 years and 94.8 per cent of doctors have below five years of experience.

The Table 2 shows the mean analysis and the rank details of doctor's perception on the factors of acceptance and use of telemedicine. It was observed that the doctor's gave first rank to the behavioural intention and sixth rank to the usage behaviour.

TABLE 2.Mean Analysis

FACTORS		N	Mean	Rank
Doctors	Performance expectancy	537	3.4397	2
	Effort expectancy	537	3.3464	4
	Social influence	537	3.3318	5
	Facilitating Conditions	537	3.4329	3
	Behavioural Intention	**537**	**3.4715**	**1**
	Usage Behaviour	**537**	**3.0130**	**6**

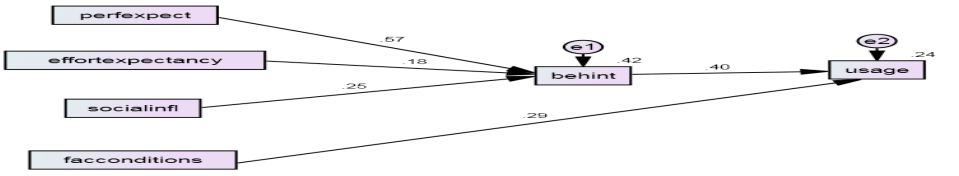
Source: Primary Data

TABLE 3. Multi Collinearity for Performance Expectancy, Effort Expectancy, Social Influence and Behavioural Intention

Respondents	Determinants of Behavioural Intention	Collinearity Statitistics	
		Tolerance	VIF
Doctors	Performance Expectancy	.424	2.360
	Effort Expectancy	.307	3.256
	Social Influence	.363	2.758

Note: If tolerance is greater than 0.20 and VIF is less than 5 then there is no multicollinearity issue

Figure 1. Testing Model to determine the direct effect of doctor's perceptions on performance expectancy, effort expectancy and social influence upon their behavioural intention as well as the effect of behavioural intention and facilitating conditions on usage behaviour.



Note: perfexpect = Performance Expectancy, effortexpectancy = Effort Expectancy, socialinfl = Social Influence, behint = Behavioural Intention, facconditions = Facilitating Conditions and usage = Usage Behaviour or Likely to Use.

DISCUSSION

[Behavioural Intention = (0.57*Performance Expectancy) + (0.18*Effort Expectancy) + (0.25*Social Influence)]

The above formula shows that one unit change in Performance Expectancy will result in 0.57 unit change in Behavioural Intention(Azen 1991; Davis et al., 1989; Fishbein and Azjen 1975; Matheisen 1991; Taylor and Todd 1995a, 1995b, Thompson et al., 1991;Moore and Benbasat 1991; Rai Zheng et al., 2005 and Syed Tabish R Zaidi, 2008; Venkatesh et al., 2003) , one unit change in Effort Expectancy will result in 0.18 unit change in Behavioural Intention and one unit change in Social Influence will result in 0.25 unit change in Behavioural Intention. It was found that all the three factors

have positive effect on Behavoural Intention to use telemedicine. The R-Square value for Behavioural Intention is 0.42; it shows that 42 per cent of variance or performance in Behavioural Intention is together explained by these three Factors. It clearly shows that by bringing positive perception on the three factors can alone cause 42 per cent of Behavioural Intention to use telemedicine and among the three factors Performance Expectancy seems to be more important. Hence the hypothesis H_{01} is accepted.

[Usage Behaviour = (0.29*Facilitating Conditions) + (0.40*Behavioural Intention)]

The above formula shows that one unit change in Facilitating Conditions will result in 0.29 unit change in Usage Behaviour (Ajzen 1991; Taylor and Todd 1995a, 1995b; Thompson et., 1991; More and Benbasat 1991) and one unit change in Behavioural Intention will result in 0.40 unit change in Usage Behaviour. It was found both the factors have positive effect on causing Usage Behavoural or likely to use behaviour (Venkatesh et al., 2003). The R-Square value for Usage Behavioural is 0.24; it shows that 24 per cent of variance or performance in Usage Behavioural is together explained by these three Factors. It clearly shows that by bringing positive perception on these two factors can alone cause 24 per cent of Usage Behavioural on telemedicine and among the two factors Behavioural Intention seems to be more important. Hence the hypothesis H_{02} is accepted.

All the variables are statistically significant at 5% level ($p<0.05$). From the standardized regression weights table the results of hypotheses are given below:

Determinants of Usage Behaviour	Beta (Sig.)	T - Values	P	Results
Behavioural Intention <--- Performance Expectancy	.570	17.315	***	Accepted
Behavioural Intention <--- Effort Expectancy	.184	5.585	***	Accepted
Behavioural Intention <--- Social Influence	.247	7.496	***	Accepted
Usage <--- Facilitating Conditions	.291	7.732	***	Accepted
Usage Behavioural <--- Behavioural Intention	.398	10.599	***	Accepted

Note: *** Less than 0.01 Significance Level and ** Less than 0.05 Significance Level

CONCLUSION

The current research concentrated on doctor's perception on the acceptance and use of telemedicine. The most important determinants from the perspective of doctors was identified. Out of the performance expectancy, effort expectancy and social influence; performance expectancy is the significant factor, whereas out of behavioural intention and facilitating condition; behavioural intention's impact is more on usage behaviour. Telemedicine is the fastest emerging topic and it carries a greater attention among researchers and practitioners. The Unified Theory of Acceptance and Use of Technology is employed to determine the behavioral intention of doctors and the findings of the study reveals that, majority of the factors have a significant loading on behavioral intention which clearly shows that the governments, private hospital managements, nursing homes, clinics and other charity hospitals etc. need to form positive perception on performance, expectancy, effort expectancy and social influence to bring positive behavioural intention to use telemedicine, whereas to increase likely to use/usage behaviour managements need to concentrate in improving the positive perception on behavioural intention and facilitating conditions, then the acceptance and use of telemedicine will improve for the betterment of healthcare.

MANAGERIAL IMPLICATIONS

It is important to understand the demands of a job and the background of the doctors' in order to introduce or implement the telemedicine in Indian hospitals, which meets specific needs. The success of the telemedicine not only depend on the perceptions of doctors but also significantly patients, clinical staff, nurses, technological support and many other reasons need to be considered. This study shows the determinants of behavioural intentions, likely to use, the readiness and positive mind set of doctors towards telemedicine. It is observed that unless and until the management bring the positive perception in the minds of hospital employees and collaboration in the employees it is very difficult to implement the telemedicine. By introducing the electronic health records and telemedicine in a country like India; health care services can be made available even to rural and remote areas, increases quality of job, reduces the frequency of hospital visits, reduces cost, saves time, telemonitoring, proper documentation of health information, security of information will be improved. The governments and hospitals can identify the required hospital resources for implementing the electronic health records and telemedicine by considering the outcome and reducing time.

FUTURE RESEARCH

As the study was carried out on both private and public sector hospitals and the future study can be on sector specific and also the data collected from Vellore District alone, so the findings cannot be generalized to entire Indian health care. The perceptions of doctors towards acceptance and use of telemedicine was studied; the perceptions of clinical staffs, nurses, pharmacists, medicial representatives and patients perspective can also be carried. The study mainly focused on understanding the psychological aspects of doctors, hence another aspect of from the perspective of existing infrastructure and technology to support, accept and use the telemedicine can also be tested.

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