Assessment of Telemedicine Health System's Practices in Public & Private Hospitals of Pakistan: A EM Based Approach

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Summary
In the 21st century due to the Technological advancements the modes of operation of service and business sector have been changed drastically. In the same way the health sectors activities also have been altered, new methods and techniques have also been devised for the treatment of the patients that were never even thought before. In the health sector telemedicine is one of the developments which were experienced lately. In the industrialized world telemedicine is being used in full capacity to provide the medical/health care services to remote and un accessible areas. But telemedicine is not very popular and admired in Pakistan; few applications are being functional presently. The main purpose of this research study is to measure and evaluate the effectiveness of telemedicine applications which are currently exist in Pakistan, its usability, acceptance and to forecast the future perspective which may hold in Pakistan. The purpose of this research is also to find the reasons of unpopularity of telemedicine applications in Pakistan, and recommend the action plans that must be taken for its spread awareness regarding the quality of health care improvement in Pakistan. As per the findings of a survey study the physicians who were practicing in the public tertiary hospitals in Pakistan has suggested that the self-efficacy, ease of use and perceived usefulness are very important factors for their acceptance of telemedicine technology. Similarly, a survey conducted with hospital executive officers, chiefs of service and center directors of selected Pakistan public healthcare establishments indicated that service needs, attitudes of medical staff, and the technology's benefits, risks and compatibility were essential to organizational technology adoption. In addition, results of an evaluative experimental study showed that the clinical decision making of physicians can be improved through use of appropriate telemedicine technology.

Key words:
Quality of Service, Telemedicine System, Medical/Health Care, Tele health / Telecare, Engineering Management (EM).

1. Introduction

Does everyone in this world deserve access to medical/health care? As human beings who care for other human beings, the only acceptable answer to that question has to be yes. Given this agreement, then, a more important question is: does everyone in this world have access to even modest levels of medical care? The answer to question two is no. The World Health Organization annual report (WHO, 2015) details the levels of health care delivered to 190 countries included in the report. The ratings range from France as number one, the United States as number 37 to Myanmar as number 190. These ratings are based on a large number of factors such as expenditure per capita spent on health care, the evenness of distribution of health care, infant mortality rate, average life expectancy at birth, and disability adjusted life expectancy[1]. What practices could be made to improve the ease/access & delivery of medical/health care for the medically underserved/remote areas ? As per Bashshur (1997) Telemedicine has been proposed as a multifaceted response to address all three problems simultaneously through innovative information technologies that expand the productive capability and extend the distributive efficiency of the medical/health care system. Telemedicine is an emerging new area, which can facilitate the delivery of medical/health care services in such a way (as shown in figure 1) to many people who cannot now be served well, or possibly not at all. [2]

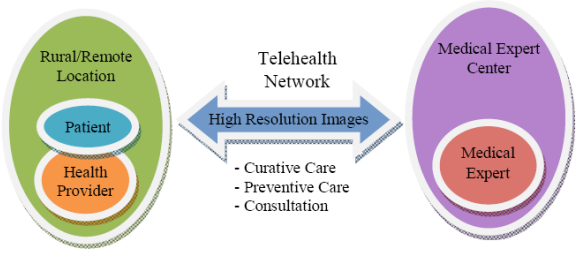

Fig. 1 A classic "Telehealth Care Network" communicating in a Remote Location & a Medical Expert Center

As per Smith (1997) developments in Information and Communication Technology (ICT) and its integration into the medical/health sector have changed and transformed medical practices, resulting in improvements in the delivery and efficacy of medical/health care information and services (Organization for Economic Cooperation and Development [3].
(OECD, 2010). In other words, ICT seems to be playing an important role in the medical/health care field, and

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ongoing advances in ICT are changing the health care system from “industrial age medicine” to “information age medical/health care” [4]. Field (1996) claims that the evolution of ICT has contributed to the development of telemedicine, which is the "use of electronic information and communications technology to provide and support health care when distance separates the participants”. Potin and Wang (2009) pointed out that the Telemedicine/Remote Health Care Management has proven to be a useful medium for a better access to medical/health care facilities in rural areas as well as in emergency situations; for example, telemedicine can be applied as an effective tool for providing specialized emergency health care services for both man-made and natural disaster-related emergencies, such as earthquakes, volcano eruptions, fires, explosions, and so on (as shown in figure 2) [5] [6].

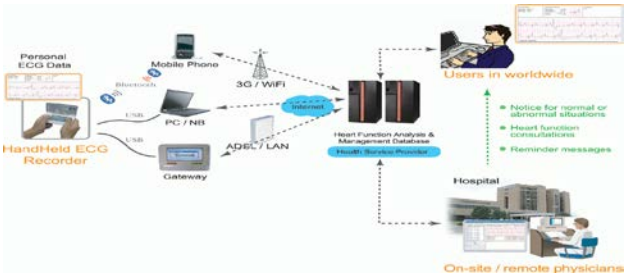


Figure 2, Telemedicine for providing specialized emergency health care services

For instance as per Garshnek & Burkle (1999) and Nicogossian, Pober & Roy (2004), the National Aeronautics and Space Administration (NASA) provided emergency health care services through telemedicine to the victims of earthquakes in Mexico City in 1985 and in Armenia in 1988. In addition, Wang (2009) state that “applications of telemedicine to disaster response began in the mid-1980s for natural disasters such as earthquakes, tsunamis, and hurricanes and for “staged” disasters in experiments and exercises” [7] [8].Furthermore, as per Brown (2005) Telemedicine/Remote Health Care Management is a good educational medium that paves the way for continuing education or medical training for health care providers in isolated rural areas, who may not have the opportunity or time to travel to a big city and participate in medical training. In this way, the use of telemedicine contributes to knowledge sharing among specialists, physicians, and other health care providers, which can add to organizational strength and capacity building [9]. As Hojabri, Borousan, and Manifi (2012) state, “information technology fosters collaborations among multiple specialists in several locations via telecommunication, and also provides foundations for organizational learning and knowledge sharing". Moreover, since time is an important factor and an integral part of the treatment for stroke patients, the use of telemedicine will probably be effective in the evaluation, management and treatment of stroke patients, especially in the distant and rural areas of Pakistan, where access to specialized health care services is very limited. In addition, through the application of telemedicine in Pakistan, knowledge management and sharing among physicians, specialists, neurologists, and other health care providers may be encouraged and fostered [10]. As Ashley (2002) mentions that there are several key advantages of telemedicine applications in health care services, including the elimination of physical distances among providers and patients (as shown in figure 1.5) ; improvement in the quality of health care services by facilitating medical training and education; and improving skills and expertise of health practitioners across distances. Thus, this study intends to ascertain the potential role of Telemedicine/Remote Health Care Management in the management of patients & knowledge sharing among medical/health care providers in Pakistan [11]. As per Tornatzk & Fleishcer (2010) Telemedicine/Remote Health Care Management is the use of computer systems, video cameras/speakers & Internet connections of high speed to support/administer & facilitate medical/health care delivery as substitute of face-to-face meeting between doctors and patients [12].According to Alltucker (2011) the practitioners & leadership of the Behavioral healthcare has shown recently their great interest in Telemedicine/Remote Health Care Management, as it is now a day’s becoming an increasingly acceptable/satisfactory medium for the patient diagnosis/treatment, mainly among geographically isolated physicians & patients. Therefore Telemedicine/Remote Health Care Management has become as a fastest /growing mode of medical/health care delivery in behavioral medical and healthcare centers all over the world. Moreover Telemedicine/Remote Health Care Management is referred as a specialized practices in which for example an Oncologist who specializes in the field of cancer treatment or the Pediatrician who gets his specialization in treating of the children. For the use of current audio/video equipments to provide the services to the patients required specialized training by the medical/health care providers. The medical/health care providers who used/practiced Telemedicine/Remote Health Care Management to provide the services to the patient always received a specialized training and were also certified in the use of Telemedicine/Remote Health Care Management [13].

Perednia & Allen (2005) pointed out that for the success of Telemedicine/Remote Health Care Management (as a viable /alternative behavioral healthcare delivery system) and for the medical diagnosis tools, there should be a strong leadership to face/focus on different challenges regarding technology & management attitude towards

Telemedicine/Remote Health Care Management[14]. Norris (2002) suggests that that the term Telemedicine/Remote Health Care Management can be distinctly separated from the terms "Telehealth" and "Telecare". Telemedicine/Remote Health Care Management uses Information Communication Technology (ICT) to transfer medical/ healthcare information for the diagnosis, therapy & education. Telehealth involves Information Communication Technology (ICT) to transfer medical/ healthcare information for the delivery of medical, healthcare, administrative & educational services. Whereas the term "Telecare" is being used to describe all the applications of the Telemedicine/Remote Health Care Management to deliver medical/ healthcare services to the patients in their homes and for the supervisions of the institutions [15]. According to Adewale, 2004; Sosa-Iudicissa, Wootton, & Ferrer-Roca, 1998 the innovation of telephony11 in the late 19th century had assisted in the utilization of telemedicine since its initiation; developments in wireless communications have facilitated the advancements of mobile cellular phones and mobile Telemedicine/Remote Health Care Management; and the beginning of low-cost digital communication has led to the growth of videoconferencing (SKYPE) which has been largely used in Telemedicine/Remote Health Care Management programs [16]. As Bashshur (1995) suggested, Telemedicine/Remote Health Care Management should be assessed from two distinct perspectives: biomedical and health services. Biomedical research focuses on effectiveness and safety, while health services research focuses on quality, access, cost, and acceptance. As mentioned earlier all types of ICT were used for Telemedicine/Remote Health Care Management. In earlier times telegraphs were used. Then telephones were invented and were employed for these services. After the advent of internet e-mails were the medium. Nowadays we have some cutting edge communication channels which offer fast and reliable connectivity. Making real-time interaction to be possible. In the mobile phone system we have 3G and 4G technologies which allow video calls. The Digital Subscribers Lines (DSL) and WiMax technologies have enabled internet for the speeds that seemed impractical a few years ago. And some new and cheap software have brought video conferencing down to consumer level and are now being used at household levels. All these technologies are currently being used for telemedicine at professional levels that provide affordable connectivity [17].

However some organizations use much expensive and reliable system to ensure much stronger connectivity and interoperability. These organizations use satellite links for telemedicine services. Most of the programs use (Very Small Aperture Terminal) VSAT (Adler, 2000), this system allows the organizations to operate across the globe and provide services to any country that requires it. According to Brown (2012) Ontario Telemedicine Network is one of the leading/largest non- profit Telemedicine/Remote Health Care Management networks in the world which is being funded by the Ontario government. The Ontario Telemedicine Network (OTN) assists in reducing physical distances and spatial boundaries, facilitating communication between health care provider and patients, and expanding knowledge sharing among medical communities through the use of ICT (OTN, 2012) [19]. The Ontario Telemedicine Network (OTN) was established to provide/improve the quality medical/health care services in Ontario in 2006 (Fiscal Year (FY) 2011-2012),OTN support 1,463 medical/health care facilities, including hospitals across Ontario, and equipped them with telemedicine devices. Consequently, the OTN was able to facilitate 204,058 patients to receive telemedicine consultations from 1,685 consultants in various medical specialties, such as psychiatry, addiction, internal medicine, neurology, surgery, pediatrics, and oncology, which resulted in a 45 million Canadian dollars reduction in the travel costs of patients, and an approximated 3.5 million Canadian dollars decline in the management and nursing costs of stroke patients through the application of telestroke in Ontario. In addition to medical care, the OTN supported thousands of educational and administrative events in the FY 2011-2012 in Ontario.

Deveau (2010) states that besides clinical care, the OTN "is also an important avenue for delivering distance education and enabling meetings between health care professionals and other partners" [20]. Yadav and Poellabauer (2012) believe that "technological advances such as the Internet, mobile and personal communication devices, wireless technologies, and portable sensor devices are continuing to revolutionize the field of health care and wellness". According to the World Health Organization (2010), one of the greatest advantages of Telemedicine/Remote Health Care Management is to improve the access to medical/health care services; thus, the application of telemedicine is very useful for "underserved and developing countries where access to basic care is of primary concern" [21]. According to Richardson (1997) in 1994 a company named WellCare was established and it used telephone lines to transmit digitized radiograph images and histology scans across the globe. WellCare provided second opinion for patients of middle east with help of Massachusetts General Hospital in Boston [22].

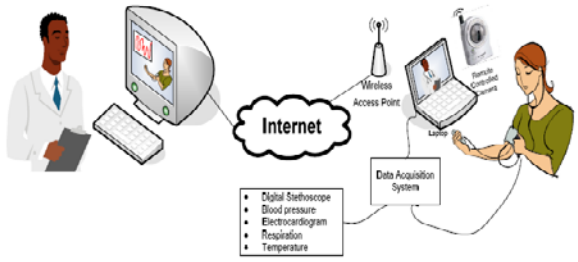


Figure 3, Transmitting digitized radiograph images & histology scans across the globe

The Aberdeen in Scotland is well known by their improvements in mobile telepresence system. it joins the Camnet telesatellite telepresence system using a mobile portable satellite system (ABB-Nora) connected to the RGIT surveillance centre. The Hammersmith Hospital is a participant of the Super-Janet network, it ‟ s a joint academic network that connects 14 sites. There are many projects associated with Hammersmith that include Neurosurgery, tumor pathology etc. The National Health Service (NHS-UK) is developing a telecommunications network for medical/health care purposes, the NHSnet, designed to be secure, of variable bandwidth, and offering a private intranet with one-way access to Internet through a firewall(Sosa & Wootton) [23] .

The Swinfen charitable trust was established in 1998 in UK. The trusts started for a noble cause, i.e. specialists from all over the world provide their opinion to patients, free of cost. It‟s a Telemedical network comprised of 257 hospitals in 68 countries and access to 540 consultants worldwide. In this system patient histories, diagnostic report like MRI scans and test results are emailed to the specialists. Who then give their opinion on the condition. In April 2013 Swinfen Telemedicine inaugurated their clinic in Khalte, Nepal as a part of its growing network. The lead time of service i.e. the median length of time between receipt of original message and first reply by a specialist consultant is currently 1.8 days. As per Adler 2000and Ali & Eunus 2008 nowadays home-care systems are introduced in market, where the product allows you to monitor the vital signs and suggests how to control them, there are schedules in which consultations are arranged with the physician and all the records of blood glucose, blood pressure etc are automatically transmitted to the doctor prior to the session. Hence a lot of time is saved and ultimately cost is also saved, proving telemedicine to be cost-efficient and productive (Ali & Eunus 2008).

As per Wright, (1997) The east African countries have as few as one doctor for 40,000 people other developing countries have similar scenarios. The data for other developing countries is shown in table 1.1(www.bigthink.com 28/4/13, Ahasanun Nessa & Moshaddique, 2008) [23]

Table 1: doctors to patient ratios of developing countries

Country	***Doctor to patient ratio***
Afghanistan	*5300*
Bangladesh	*3169*
India	*1700*
Myanmar	*2800*
Nepal	*4800*
Pakistan	*1400*
Srilanka	*1800*

2. Related Work

According to this information we see that number of doctors is very less in the developing countries. These statistics show the number of general physicians, authentic data regarding specialists was not found. However considering these values we see that specialists would be even lesser in number. The standard doctor to patient ratio is 1:600 as standardized by WHO (www.who.int 28/4/13). To fulfill the needs, telemedicine can be viewed as a valid and feasible option and obviously cost-effective [24]. According to Harris 2002 similarly OTRI (Online Telemedicine Research Institute) since 1999,have a very large telemedicine program including more than 200 sites connected using VSAT & ISDN. Both, Store and Forward and interactive type of telemedicine is practiced. OTRI covers a large rural area and connects it with 225 different hospitals to provide all specialist consultancies. This project is also funded by the Government and ISRO [25].

Telestroke is defined as "the use of audio, video, or other telecommunications and electronic information processing to transmit data that are relevant to the diagnosis and treatment of acute stroke” (Dashpande, Khoja, McKibbon, Rizo, & Jadad, 2008, pp. 14-15). According to the Canadian Stroke Network (2011), telestroke provides a great opportunity for the timely treatment of stroke patients in rural and remote areas, and can be utilized for acute treatment, follow-up, and rehabilitation of stroke patients[26]. Furthermore, telemedicine is applied according to the medical specialities, such as teleradiology, telepathology, telederamtatology, telepsychiatry, telecardiology, telesurgery, and so forth (Bashushur, Krupinski, & Grigsby, 2011; Mutausitz & Breen, 2007). For instance, teleradiology, which commonly uses asynchronous technology to transmit radiologic images, is the oldest, well established, well-accepted, and prevalent form of telemedicine; whereas, applications of telemedicine in pediatrics and emergency medicine have been evolving recently (Bruke & Weill, 2005; Field, 1996; Krupinski et al., 2002) [27] [28].

In addition, there are many legal and ethical concerns that have negative impacts on the implementation of telemedicine. These legal and ethical concerns include, but are not limited to, privacy, confidentiality, and security of

patients' information and medical records; inter-state or crossborder telemedicine consultations; and professional liabilities (Whitten, Cook, & Cornacchione, 2011; Stanberry, 2006; Maheu, Whitten, & Allen, 2001). The electronic health record (EHR) of the patients is an organized compilation of the electronic health information about an individual patient or population. It is a evidence in digital format that is supposedly capable of being shared across different medical/health care settings (as shown in figure 4 &5): [28] [29] [30].

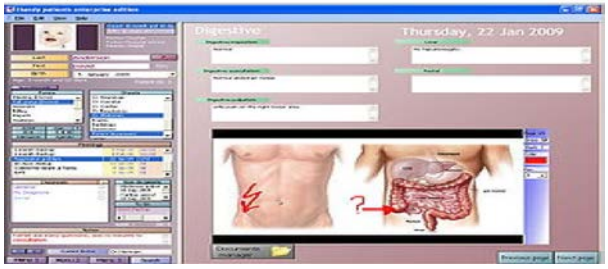


Figure 4, Sample view of an electronic health record

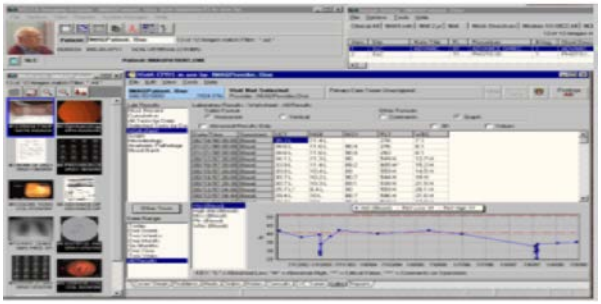


Figure 5, Sample view of an electronic health record based on images

There is a long journey before telemedicine reaches its full potential. Still telemedicine is underutilized and populations in rural and underserved areas, who could have potentially benefited from the application of telemedicine, do not have access to telemedicine services (Miller, 2010) [31]. Despite all the advantages and promises of telemedicine, it is not a solution for all the health care problems (Matusitz & Breen, 2007) [31]. Hjelm (2006) claims that "the fact that telemedicine might have great potential for improving health-care delivery does not necessarily mean that it will be implemented". There are numerous barriers that contribute to the underutilization of telemedicine. Some of these barriers include, but are not limited to, technological, financial, ethical and legal barriers[32]. Furthermore, Rogove, Demaerschalk, and Vespa (2012) categorize the barriers to the acceptance and utilization of telemedicine as being both human and technological [33].

Additionally, the ethical aspects of telemedicine require medical doctors to pay the same level of attention and care during the telemedicine consultations as they do in face-to-face doctor-patient consultations. Moreover, they should implement strict measures to protect patients' data from damage, theft, and access by unauthorized individuals (Toader, E. Damir, & Todar, 2011) [34]. The medical interview requires medical/health care providers and patients to be in the same room and at the same time; however, with the advances in Information and Communication Technology (ICT) and the advent of videoconferencing this is not an absolute requirement anymore (Onor & Misan, 2005), as "the use of videoconferencing enables a primary care provider and patient at one location to confer with a specialist at a distant site" (Street, Wheeler, & McCaughan, 2000 [35].

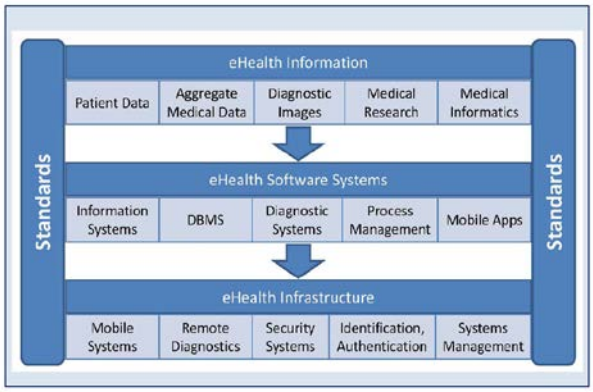


Figure 6, Standards and eHealth (January 2011)

As per Oberholzer M; O'mahony D; Brauchli K, Banach L (2005) the open source tools such as i-Path are being used in many countries to transfer images and pictures for diagnosis and treatment purposes. Bari V; Marcelo A, Irfan M, Fatmi Z, Firaza PN, Dandan AJ, Shaikh S, (2011) also claims that , telemedicine showed its effectiveness in diagnosing tuberculosis in developing countries[36]. According to Oudshoorn (2011) Telecare is defined as the "remote delivery of health care services to users in their homes via the application of ICT". Through the use of telecare patients with chronic heart disease, diabetes, and respiratory insufficiencies do not have to visit health care providers for measuring their blood pressure, pulse rate, and body temperature, testing their blood glucose; and performing their ECGs; instead patients perform these measurements and tests at their homes and the measurements are transferred to their telecare centers, where telenurses12 evaluate them [37].

3. Problem Statement

Due to the revolution of Information and Communication Technology (ICT) Telemedicine/Remote Health Care Management has a potential for providing medical/health care users information as per their needs/requirements, even less educated/elderly people having severe health problems and medical issues. The developing countries often experience of virulent diseases, comprises on the contagious, communicable and chronic diseases related to changes in their lifestyle & consumption patterns. Much of the disease burden of low-income countries stems from

a number of consistent factors such as poverty/ malnutrition, poor hygiene & living environment, along with gender & caste-based intolerance. So visitation to doctors from remote and even urban became difficult remote health care/telemedicine provide solution. Education and Training of e- medicine, Funded Pilot project collapse after seizer of money, overall the health budgets are extremely low in developing economies.

4. Types of Telemedicine

There are a number of ways in which ICT can be used for the transmission of medical services. According to Norris there are four categories of telemedicine, i.e. teleconsultation, tele-education, telemonitoring and telesurgery (Norris 2002). But according to most of the authors there are two main types of telemedicine that are practiced most commonly:

4.1. Store and Forward

Also called as prerecorded, information is acquired and stored in a format before being transmitted (Wooton & Craig, 2006), this activity is usually carried on through e-mails where diagnostics and test reports are referred to a specialist for his opinion (Rao & Lombardi, 2009). This type of telemedicine is also referred as asynchronous because the information sends at sometime may or may not be received at the same time.

4.2 Real Time/Interactive

This form of telemedicine involves real-time interaction between service provider and recipient through audio or audio-visual link. This type is also called synchronous form of In the older time store and forward type of telemedicine was more popular as the communication system was not fast enough for video transmission, so the medical images and diagnostics were conveyed through e-mails. Hence the older telemedicine programs and those initiated in developing countries mostly employ store and forward paradigm. The early implementation of the interactive form of telemedicine took place via Telephone using PSTN (Public Service Telephone Network), because video conferencing was not available or financially possible. (Darkins and Cary, 2000) [38].

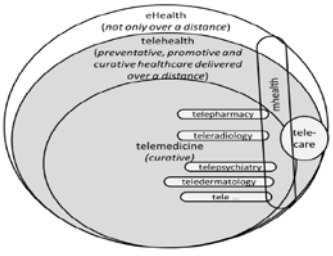


Figure 7, "Telemedicine, ehealth, telehealth, telecare and mhealth"

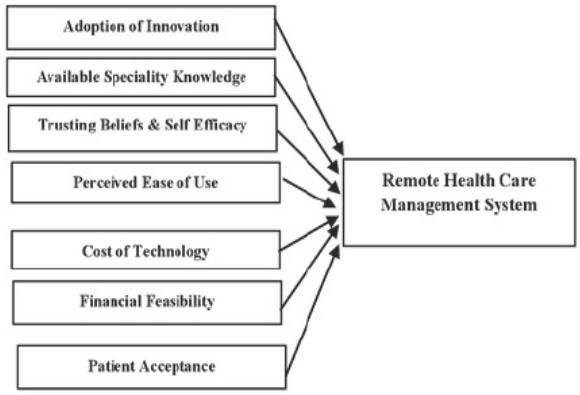
5. Research Approach

Combination of approaches was followed in the research. The study was undertaken using both Inductive and Deductive approaches. In the due course certain „construct " were developed and certain „constructs" were tested using the data collected. The nature of study was exploratory and there was little literature available on the subject, therefore data was generated and analyses was done that reflected upon themes suggested by the data, so the process tended more towards inductive approach. However both approaches were used for different parts of the research.

6. Research Strategy

The research questions of this study could only be answered by those who practiced telemedicine in Pakistan thus „Survey" strategy was used. The target audience for most of the research questions was specialists/senior practitioners of telemedicine; it was difficult to undertake interviews from all of them as they were most of the time busy or unavailable. So questionnaire based survey was conducted for the convenience of both the respondents and the researcher.

7. Research Framework



8. Hypotheses:

H1: There is a significant impact of **adoption of innovation** on remote health care management system.

H2: There is a significant impact of **available speciality knowledge** on remote health care management system.

H3: There is a significant impact of **trusting beliefs & self-efficacy** on remote health care management system.

H4: There is a significant impact of **perceived ease of use** on remote health care management system.

H5: There is a significant impact of **cost of technology** on remote health care management system.

H6: There is a significant impact of **financial feasibility** on remote health care management system.

H7: There is a significant impact of **patient acceptance** on remote health care management system.

9. Reliability of scale

The value of the "Alpha coefficient" has space from zero to one (0 to 1) and it is employ to explain that how much are reliable taken out from the bifurcated way i.e., the research questions asked having two potential answers which may be multi-point designed questionnaires /scales, such as the marked scale: 1 = Strongly Agree and 5 = Strongly Disagree.In this research study there exists seven (7) independent variables and there exists only one (1) dependent variable as per found in the existing literature review which has been used for the calculation of their relationship among seven (7) independent variables also their relationship with the dependent variable.

Table 2: multi-point formatted questionnaires or scales

Scale	***Description***
1	*Strongly Agree*
2	*Agree*
3	*Neutral*
4	*Disagree*
5	*Strongly Disagree*

Table 3: Reliability Scale- Cronbach's Alpha

Variables	***No. of Items***	***Cronbach's Alpha***
Overall	*40*	*.665*

In general the overall value of "Cronbach's Alpha" for checking the reliability is .665. According to Hair (2006), this numeric value shows that the research data is reliable, also as per the Sivanand (2004) if the value of alpha is more than 0.5, it confirms that the scale which has been used can be considered as a reliable scale. Therefore in this research study the questionnaire which has been used is very much reliable in order to determine the impact of the decision variables & for the assessment of the medical/health care problems as per the Pakistani environment.

10. Descriptive Statistics

Descriptive statistics (DS) is used to the analysis of the data which help out to explain, demonstrate or sum up the data such as, e.g., different patterns may appear from the data. However, Descriptive statistics (DS) never allowed us for the ending other than the data which we had examined for reaching the winding up about any hypotheses or suppositions which we might have prepared. It's just a method to explain our research data. Descriptive statistics are extremely significant as if we simply presented our raw data it will be tough to imagine what the data was demonstrating, particularly if there was a bunch of it. Therefore Descriptive statistics allows us to present the data in a more significant means, which permit simpler explanation of the data.

Table 4: Descriptive Statistics

	N	***Min***	***Max***	***Mean***	***Std. Dev.***
DV	*160*	*3.00*	*4.80*	*3.7554*	*.32699*
VI	*160*	*3.00*	*4.80*	*3.7239*	*.30827*
V2	*160*	*3.20*	*4.80*	*3.7400*	*.30954*
V3	*160*	*3.00*	*4.80*	*3.6793*	*.31154*
V4	*160*	*2.00*	*4.80*	*3.5918*	*.45598*
V5	*160*	*3.00*	*4.50*	*3.7500*	*.31722*
V6	*160*	*2.00*	*4.50*	*3.4254*	*.31112*
V7	*160*	*3.00*	*4.50*	*3.3258*	*.34452*
Valid N	*160*				

Table 5: Kolmogorov-Smimov and Shaprio Wilk Test in SPSS

	Cases					
	Valid		***Missing***		***Total***	
	N	%	N	%	N	%
Data	160	100	0	0	160	100

The above results have been calculated from two renowned tests of normality, named as "Kolmogorov-Smirnov" & "Shapiro-Wilk" Test.

11. Research Model

Regression model is presented as follows.

$Y=\alpha+\beta1(x1) + \beta2(x2) + \beta3(x3) + \beta4(x4) + \beta5(x5) + \beta6(x6) + \beta7(x7) + \varepsilon$

$DV= \alpha +\beta1 (V1) +\beta2(V2) + \beta3(V3) + \beta4(V4) + \beta5(V5) + \beta6(V6) + \beta7(V7) + \varepsilon$

Where : X1 = V1 , X2 = V2, X3 = V3 , X4 = V4 , X5 = V6, X6= V6, X7= V7 & ε = error term

Table 6: Table Model Summary

Model	*R*	*R Square*	*Adjusted R Square*	*Std. Error of the Estimate*
1	*.745a*	*.555*	*.551*	*.21912*

R: 74.5% correlation coefficient between all the predictors (independent variables) and the dependent variable. **R2** : 55.5% proportion of variance in the dependent variable predictable by the predictable variables. Adjusted **R2:** 55.1% dependent on the number of variables used in the equation.

Model	*Unstandardized Coefficients*		*Standardized Coefficients*	*t*	*Sig.*
	B	*Std. Error*			
(constant)	.566	.273		2.075	.041
0	.454	.080	.428	5.650	.000
V1	.619	.092	.586	6.706	.000
V2	.206	.072	.197	2.868	.005
V3	.051	.042	.071	1.223	.224
V4	.145	.064	.141	2.272	.025
V5	.258	.077	.114	2.333	.006
V6	.325	.087	.128	4.255	.005
V7					

All independent variables i.e. V1 (Beta .428, t 5.650), V2 (B .586,t 6.706) , V3(B .197, t 2.868) V4 (B 0.71, t 1.223) V5 (B .141, t 2.272) V6 (B .258, t 2.333) and V7 (.325, t 4.255) showing positive trend against DV.

12. Conclusion

It will give a thorough research input to all stake holders of the country dealing with health care and will give good input to government bodies for further formulating national health care policies. Furthermore it will open a new era of remote health care for hospitals, doctors and patients and all stake holders can benefit from it.

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