

An In - Depth Study About Patients Discernment Towards Virtual Healthcare

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Abstract

Virtual healthcare become an important technology to attract patients which helps in transforming the healthcare delivery in updated terms. This eventually provides improved access to patient care and increased satisfaction in minds of patients. The virtual healthcare acts as an instrument for patients and caregivers to stay connected. The virtual healthcare adoption extends physicians reach all around the globe. This also offers convenience and easy options for patients to choose their healthcare service. This may perhaps bring about better patient experience making the patient loyal to the service. The patient will also improve their adherence towards medications. The tracking towards health conditions of patients become more and more easy associated with accountability of patients. This current literature aims at finding patient opinion about virtual healthcare, its benefits, outcomes , expectations and challenges.

Key words: Virtual healthcare, physicians , care givers, medication, remote areas, tracking, convenience, patient experience.

Introduction

Virtual healthcare alludes the virtual visit happening in between patient and health care professional may be a doctor or nurse, etc. This takes place by employing communication technology using connectivity of audio as well as video. The mentioned virtual visit may be videoconferencing also. This happens irrespective of location and time. The patients holds freedom in getting numerous opinions for their medical condition with minimal utilisation of resources. The virtual healthcare serves as an aid during consultations, status reports, meetings, check ins , treatments as well as diagnosis. Even the serious conditions such as diabetes can be given consultation and treatment through virtual healthcare. The virtual healthcare enables physicians in order to track procedures and conditions for patients

located at remote areas. These patients may even possess chronic medical conditions including hypertension, diabetes, etc which require hospitalisations frequently due to lack of transparency and communication regarding condition of patient. The virtual healthcare ensures patients to sit at their homes comfortably and obtain medical advices from multiple physicians. The care givers and physicians are provided with excellent empowerment in virtual healthcare setting. They can also avail accessibility to remote patients. The virtual healthcare may be experienced at lower costs because it dodges transportation costs, consultation fees, etc. The continuity of care can be maintained when virtual healthcare is concerned. Since the doctors have continuous communication with patients, the rapport build between them will be much stronger. The relationships can be build even much better while upholding virtual healthcare. Subsequently, patients updated health information can be obtained and necessary medical treatments are facilitated. The non stop monitoring helps in collection of patients vital signs regularly which in turn improves patient care. The time delays and waiting times at hospitals can be reduced. The human errors can be averted by employing automatic networks. The present literature helps in finding patient discernment towards virtual healthcare. For this the study takes hold of thirteen variables such as Location, Convenience, Empowerment, Lower costs, Continuity of care, Doctor patient relationships, Health status, Vital signs collection, Malfunction, Security and privacy , Documentation, Delays and Errors.

Literature Review

Fowler et al. (2014) demonstrated regarding virtual services for health care neighbourhood which is a network cum website for providing services to people suffering from dementia. The care-givers can login to this website and extend their service towards dementia affected patients. The contents of that website includes videos, question and answers, blogs, etc.

Kasurinen (2016) elucidated about digital environments that provide common education platforms for learning in different domains like flying airplanes and monitoring nuclear plants. Nowadays virtual reality is not much expensive. The augmented reality and virtual reality can be installed in households for budgeting activities.

Jung and Padman (2014) explained about healthcare delivery which is virtualised. This provides users to understand about usage patterns regarding online medical consultations. The study also implies that there is elevated utilisation with respect to e-visits when compared to 24/7 hours continuous operations in hospitals.

Barker et al. (2019) explores the virtual environment by performing a research which provided excellent, efficient, reusable, open as well as reproducible technology for offering healthcare services to patients. This is done through online platforms for enabling better health outcomes and satisfaction for patient.

Alaluna et al. (2019) illustrated regarding virtualisation systems that work as a network for sharing information between patients and physicians. A cloud network which has multiple phase is enabled in this paper in order to study the provisions that are available in virtual networks at different locations and containers.

Liaw et al. (2019) designed and evaluated a 3D environment which is virtual for learning in collaboration with a professional team for delivering healthcare services. The study also investigates the patient experience out of this virtual service. The study takes hold of six courses such as occupational therapy, physiotherapy, medical, nursing, pharmaceutical studies, social work , etc.

Zeadally and Bello (2019) harnessed the power with respect to internet of things in order to improve connectivity of healthcare towards patients. This study focusses on interoperability as well as connectivity in order to provide and enhance infrastructure related to information technology and communication services in healthcare delivery.

Karaca et al. (2019) suggested a suitable solution which is based on stroke diagnosis knowledge for developing an application for delivering healthcare service. This study encompasses big data applications, artificial neural networks ,etc. this will enhance access and accurate health data will be given for analysis of patients.

Grabowski and Roberts (2019) described and compared reliability of higher organisations and resilient organisations to emerge with virtual services relating to healthcare. The challenges should be averted with assistance of technology expertise and knowledge professionals. This enables better healthcare delivery to patients.

Zhu et al. (2019) measured the communication networks that works electronically within teams of virtual care by employing electronic health record for accessing log data of patient. These works are selected randomly by associating with clinical differences of patients. These are derived from core teams which are defined by experts.

Patients conception regarding virtual healthcare

The supreme objective of current literature is to examine the opinion of patients towards virtual healthcare. This includes the benefits, technologies employed, outcomes and challenges of virtual healthcare. This is done by employing a questionnaire which contains various views with respect to virtual healthcare from patients side. The sample size for this study is 79. The responses were collected from patients of diversified corporate hospitals. The demographic summary of patients provides details about their gender, age, qualification and annual income.

Table 1: Patients Summary of Demography

Gender	Frequency	Percent
Male patients	29	36.7
Female patients	50	63.3
Total	79	100.0
Age	Frequency	Percent
< 25	24	30.4
25- 30	43	54.4
>30 years	12	15.2
Total	79	100.0
Qualification	Frequency	Percent
UG	14	17.7
PG	28	35.4
Others	37	46.9
Total	79	100.0
Income/Yr	Frequency	Percent
< 1 Lakh	5	6.3
1 - 5 Lakhs	36	45.6
> 5 Lakhs	38	48.1
Total	79	100.0

It is evident from calculated frequency outline that our respondents are female patients (63.3%) between 25 - 30 years of age (54.4%) who possess other qualifications (46.9%) and gaining above 5

lakhs (48.1%) per annum. Table 2 provides details about mean test to identify the patient knowledge and discernment with respect to virtual healthcare. Likert's scale is used to perform this.

Table 2 : Patient Perception regarding Virtual Healthcare using Mean Analysis

S.No	Patient Perception regarding Virtual Healthcare using Mean Analysis	Mean	Rank
1	Virtual healthcare is done through communication technology at any location (Accessibility)	3.9747	13
2	Patient can remain conveniently at their homes and get medical advices (Convenience)	4.1392	11
3	Empowerment and accessibility is available for the caregivers (Empowerment)	4.2658	10
4	Patients may experience low costs (Lower Costs)	4.1292	12
5	It leads to excellent continuity of care (Continuity of Care)	4.3671	7
6	It helps in building strong doctor patient relationships (Doctor Patient Relationships)	4.4177	5
7	It provides updated information about patients' health status (Health Status)	4.3924	6
8	Monitoring helps in collection of patients vital signs regularly which improves patient care (Vital Signs Monitoring)	4.3418	9
9	Malfunction in technology may occur (Technology Malfunction)	4.4810	3
10	Security and privacy issues may be encountered (Security and Privacy)	4.4937	2
11	Outstanding Documentation (Documentation)	4.3571	8
12	Reduces time delays and waiting time (Delays)	4.4430	4
13	Minimises human errors (Human Errors)	4.5063	1

Table 2 describes analysis of mean regarding patient discernment about virtual healthcare. It is interpreted from mean table that mean value is highest for Human errors followed by Security and Privacy, Technology malfunction, Delays, Doctor Patient Relationships, Health Status, Continuity of

Care, Documentation, Vital Signs Monitoring, Empowerment, Convenience, Lower Costs and Accessibility. Therefore, the results imply that patients perceive that human errors will be reduced as a result of virtual healthcare. Table 3 discloses the patient perception towards virtual healthcare through factorisation.

Table 3: KMO/Barlett's Test

Sampling Adequacy Measure		0.862
Chi Square Value		584.098
Significance Value		0.000
	Total	Variance (Cumulative)
Rotated Sums of Squared Loadings	3.637	27.973
	2.963	50.765
	2.585	70.646

Table 3 explains factor analysis and proves that the collected data is sufficient to perform the same. The cumulative variance obtained shows variance of components values . The table depicts that three components obtained together explain 70% of variance.

Table 4: Grouping through factor analysis regarding patient perception about virtual healthcare

S.No	Perception	Component			Component Name
		1	2	3	
1	Doctor Patient Relationship	0.8220 .831	-	-	Service Monitoring
2	Documentation	0.821	-	-	
3	Vital Signs Monitoring	0.759	-	-	
4	Human Errors	0.727	-	-	
5	Health Status	0.673	-	-	Challenges
6	Security & Privacy	-	0.838	-	
7	Delays	-	0.811	-	
8	Continuity of Care	-	0.656	-	

9	Technology Malfunction	-	0.613	-	
10	Accessibility	-	-	0.794	Benevolence
11	Convenience	-	-	0.773	
12	Lower Costs	-	-	0.654	
13	Empowerment	-	-	0.615	

Table 4 explains grouping of three components with respect to patient discernment about virtual healthcare. Table 5 demonstrates ANOVA that is used to examine the perception difference among patients (respondents) on basis of demographic profile.

S. No.	Perception Vs Demography	F	Sig.
1	Age Vs Service Monitoring	6.978	0.002
2	Age Vs Challenges	2.615	0.080
3	Age Vs Benevolence	10.091	0.000
4	Qualification Vs Service Monitoring	2.008	0.12
5	Qualification Vs Challenges	1.942	0.130
6	Qualification Vs Benevolence	5.191	0.003
7	Annual Income Vs Service Monitoring	5.763	0.006
8	Annual Income Vs Challenges	2.743	0.071
9	Annual Income Vs Benevolence	14.388	0.000

Table 5: Perception Vs Demography

From the ANOVA table it is found that there is perception difference with respect to patients age towards service monitoring and Benevolence but there is no perception difference with respect to patient age towards challenges. It is also found that there is perception difference with respect to patients qualification towards Benevolence but there is no perception difference with respect to patient qualification towards service monitoring and challenges. Also, there is perception difference with respect to patients annual income towards Benevolence and Service monitoring but there is no perception difference with respect to patient annual income towards challenges.

Conclusion

Although virtual healthcare offers multiple benefits, there are some challenges also. The technology may not function properly which will lead destruction of communication transfer to hospitals from patients place. This is even worse if the patient is under palliative care. There also occurs privacy and security issues due to internet crimes. The documentation may sometimes be an outdated one which leads to improper monitoring of patients. The upcoming trends in virtual healthcare will comprise block chain technology , artificial intelligence, robotics , etc. All these technologies have already been implemented in certain hospitals over the globe. To conclude , virtual healthcare may possibly rule the healthcare industry in future.

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