

Study on the Consumer Behavior Towards E-Health

By

Sudamini Saproo

*Dissertation submitted for the partial fulfillment of the
MBA Hospital and Health Management*

Academic year, 2016-2018



The IIHMR University, Jaipur

1, Prabhu Dayal Marg, Sanganer, Airport
Jaipur 302029, Rajasthan
Ph: 0141 3924700, Fax: 3924738
Website: www.iihmr.edu.in

Study on the Consumer Behavior Towards E-Health

By

Sudamini Saproo

*Dissertation submitted for the partial fulfillment of the
MBA Hospital and Health Management*

Academic year, 2016-2018

Doctor E Health Services Pvt. Ltd., New Delhi



The IIHMR University, Jaipur

1, Prabhu Dayal Marg, Sanganer, Airport
Jaipur 302029, Rajasthan
Ph: 0141 3924700, Fax: 3924738
Website: www.iihmr.edu.in

TO WHOMSOEVER MAY CONCERN

This is to certify that **Sudamini Saproo** student of MBA Hospital Management from The IIHMR University, Jaipur has undergone internship training at Doctor.e, Health Services Pvt. Ltd on topic **Consumer Behavior Towards E-Health** from 5th Feb 2018 to 4th May 2018.

She has successfully carried out the study designated to her during internship training and her approach to the study has been sincere, scientific, and analytical.

The Internship is in fulfillment of the course requirements.

I wish her all success in all his future endeavors.


Ashok Kaushik
Dean, Academics and Student Affairs
The IIHMR University, Jaipur


Dr. Ruchi Garg
Associate Professor
The IIHMR University,
Jaipur



doctor.eTM
Intellect Enabled Diagnostics

Date: 5th MAY 2018

Dissertation Certificate

This is to certify that **Ms. Sudamini Saproo** has completed her dissertation with Doctor E Health Services Pvt. Ltd from 5th February 2018 to 4th May 2018.

Her topic of dissertation is Consumer Behaviour Related to E-Health. Apart from that during this period, she familiarized herself with all the operations and processes of the laboratory, conducted initial market research and development and was also a part of the accreditation process of our laboratory.

On evaluation, she was found to be sincere, hardworking and efficient.
We wish her good luck for her future endeavors.

Best Regards,



Deeksha Gaur

Manager - HR

DOCTOR E HEALTH SERVICES PVT. LTD.

209-C, 1st Floor, Masjid Moth, South Ext. Part-2
New Delhi-110 049, INDIA

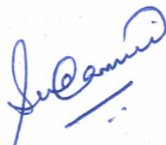
+91-11-4101 6551

info@doctore.in
www.doctore.in

Registered Office: 617, Hemkunt Chambers, 89, Nehru Place, New Delhi-110 019, INDIA

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation **CONSUMER BEHAVIOR TOWARDS E- HEALTH** at **DOCTOR.E HEALTH SERVICES PVT. LTD.**, submitted by **SUDAMINI SAPROO** Enrollment No- **IIHMR-U/01/2016-18/0505** under the supervision of **DR. RUCHI GARG** for award of MBA in Hospital and Health Management of the University carried out during the period from **5TH FEBRUARY 2018** to **5TH MAY 2018** embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other institute or other similar institution of higher learning.



Signature

ABSTRACT

TITLE: A Study to Analyze Consumer Behavior towards E-Health.

AUTHOR: Ms. Sudamini Saproo

Consumer behavior is the study of how individual customers select, purchase and utilize services and goods to satisfy their requirements. It refers to the activities of the consumers and the purpose behind those activities.

E-Health is a broad term, and refers to the use of web based data and communication technologies in healthcare.

Consumer e-health offers users the opportunity to shape their personal healthcare for themselves as far as possible. Not only does this concern lifestyle and prevention but also self-diagnostics and self-treatment. It has many advantages such as effective and efficient costing and accessibility. For instance, a larger number of patients come through online consultation that cannot be there in person. Furthermore, availability permits patients/patient's family to access their medical records online which causes them to remain mindful about their health status. What's more, e-health has crossed the limits of conventional medicinal services by giving facilities that were initially considered past possible, for example, doctors can treat and diagnose their patients without even meeting them physically, over the internet. Also, e-health offers to interface specialists and other healthcare experts with their online patients. Patients are increasingly using the Internet and other technologies to engage in their own healthcare, but this aspect of healthcare still needs a lot of research.

OBJECTIVE

- To explore the current level of consumer knowledge related to e-Health in the Indian Healthcare Sector.
- To understand the existing e-Health practices.
- Identifying the online sources of health information for the targeted customer.

METHODOLOGY:

The study design is descriptive cross sectional in nature. Primary data was collected over a period of three months by face to face interviews using a structured questionnaire containing open and

close ended questions that were pre-tested. The participants were patients at Aakash Hospital, Malviya Nagar, New Delhi. The sample size is 200.

CONCLUSION:

Many people in urban area are not comfortable with e-Health services. They still wish to follow traditional methods of health care, especially senior citizens who are not much attentive with new technologies. They still wish doctors to handle them and check them in a traditional way. Many people are pretty uncertain about whether to apply e-Health on themselves or not. They appreciate modern concept of cure of health electronically, also they see the future growth of this arena but they are not ready to apply these techniques on themselves. The younger generation is keen on using these services but they still point out that e-health would never be able to fill in the gap when it comes to the touch and feel factor of visiting a doctor. Very few are enthusiastically agreed with e-Health and welcome it, especially those who are having good knowledge of technology. With enhancements in ICT sector, we can expect a good future of e-health with consumers.

ACKNOWLEDGMENT

I convey my heartfelt gratitude to Dr. Vimarsh Raina, CEO, Doctor.e Health Services Pvt Ltd, for giving me the opportunity to work with Doctor.e Health Services Pvt Ltd. and allow me to conduct the project during the dissertation period.

I would like to convey my thanks to Mr. Pranav Tripathi, Managing Director, Doctor.e Health Services Pvt and Dr. Trupti Deshpande, Consultant Pathologist, Doctor.e Health Services Pvt, for mentoring and guiding me and for their constant encouragement and continuous support when it came to guidance, suggestions and their expertise during my dissertation period at Doctor.e Health Services Pvt.

I express my sincere thanks to my internal guide Dr. Ruchi Garg for her valuable guidance and timely suggestions as and when I was seeking them.

I would also like to take this opportunity to thank Dr, Ashok Kaushik, Dean (Academics) and Professor cum Proctor and Mr. Hem Bhargava, General Manager, Corporate (Academics), Dy. Registrar (Academics) for providing me with the necessary support and for their faith in me.

Last but not the least, I would like to express my gratitude for my parents and friends for their constant encouragement and faith in me during my summer internship.

CONTENTS

1. INTRODUCTION
 - 1.1 BACKGROUND INFORMATION
 - 1.2 ABOUT E-HEALTH A BROADER IEW
 - 1.3 AIM OF THE STUDY
 - 1.4 PURPOSE OF THE STUDY
 - 1.5 OBJECTIVE OF THE STUDY
2. REVIEW OF LITERATURE
3. RESEARCH METHODOLOGY
4. RESULTS
5. DISCUSSION
6. CONCLUSION
7. RECOMMENDATIONS
8. BIBLIOGRAPHY
9. ANNEXURE

LIST OF FIGURES

Figure 1: The nature of healthcare; current and future situation

Figure 2: Percentage of categories of the respondents

Figure 3: Reason of Visit of the Respondent

Figure 4: Vital Factor for Choosing a Laboratory Service

Figure 5: Respondents knowledge/awareness about e-health services/platforms

Figure 6 : Different uses of E-health Services by Respondents

Figure 7 : General Behaviour of the Respondents towards E- Health

1: INTRODUCTION

According to the Global Burden of Disease Study (GBD) published in the medical journal *The Lancet*, India has finished at 154th among 195 countries on the healthcare index. However, India's healthcare access and quality (HAQ) index has increased by 14.1, up from 30.7 in 1990 to 44.8 in 2015. India lags behind Sri Lanka (72.8), Bangladesh (51.7), Bhutan (52.7) and Nepal (50.8) and ranks above Pakistan (43.1) and Afghanistan (32.5).

Healthcare sector easily classifies itself as the biggest service sector of our Nation, at present, receiving enormous government funding and support from investors leading to its rapid growth. Expectations of the customer in regard to services in the healthcare sector pose a very serious challenge for the providers because of the need to mark an exceptional impression on the consumers mind.. E-health is capable of filling in the gaps of the limited capacity of the present healthcare system thereby leading to improvement of overall health status of the country.

1.1: BACKGROUND

Healthcare is in good progress. There have been extensive expectations that innovation will have the capacity to give better results, decrease costs and encourage the on-going shift from treating conditions to persistent and prevention-centred and -driven healthcare.

Consumer healthcare technology has so far not been as effective as expected in bringing reasonable developments into individuals' healthcare practice however. E-health services are for the most part too innovation driven, and frequently neglect to make it past the pilot variant since they disregard to recognize the interdependency of innovation, human (information) conduct, and the social condition.

The idea is comprehended in a general sense as the utilization of data and communication technology to enhance health when all is said and done and the medicinal services framework in particular..The state-of-the-art e-health has underlined the requirement for a new, holistic way to deal with the development of advances that addresses "the many-sided quality of healthcare and the customs and habits for patients and different partners".

Regardless of the clear capability of the Internet and e-services in human services and the dispersal of healthcare data, the e-health visions of the late 1990s are still, after right around two decades a long way from being satisfied. Many individuals, particularly more established grown-ups in age categories 55+, don't appear to look for or acquire healthcare data from the web by any means, and the deployment of e-health services has been much slower than anticipated. By and large, Internet utilize has a tendency to be less regular in old age. Particularly seniors with poorer healthcare all the more frequently belong to a gathering of non-Internet users. A noteworthy extent of the expanding public expenditure, healthcare services, and as of now squandered human lives could ostensibly be followed back to data and data management issue

1.2: ABOUT E- HEALTH: A BROADER VIEW

E health is typically defined as the use of internet services in healthcare so that patients can access and share their medical needs easily.

To get a general overview of the topic we need to know how digital technology and internet can do 3 fundamental things for any consumer:

- Access to Knowledge:** Access to various sources of information, products & abundant knowledge in the easiest and the most impartial manner - information is no longer just limited to a fortunate few.

- From Complex to Simple:** Consumers do not need complexities when it comes to knowledge about services. Digital technology has helped in breaking down complexities into simpler concepts for better understanding which has further attracted an even larger base of customers.

•**Free Flow of Information:** Internet is a different world all together, free of middlemen causing quality or price mismatch therefore leading to 'transparency', which is critically important to ensure the systems are efficient.

Nowadays, electronic tools have a broad outreach and offer customers a wide range of mutually independent functions to manage their individual health aspects.

For those clients who are not ready to manage the volume of healthcare data, choices and coordination, these tools if set up together legitimately in the way they are spread and designed- could facilitate the burden and ease it .The functions incorporate the following:

- **Health data:** Providing data is the fundamental or sole reason for a few tools that incorporates healthcare data that is either effortlessly searchable or accessible and properly characterized.
- **Healthcare tools:** Interaction between patients, specialists and associations are encouraged by different e-health tools. The most widely recognized types of healthcare tools are patient health records, understanding portals and secure specialist-patient email. These tools are an open portal to numerous other e-health information functions and are how most Indians are acquainted with e-tools tools.
- **Disease management:** These devices give checking, recordkeeping, and specialized gadgets for communication to enable customers to deal with a particular sickness, for example, diabetes or malignancy, commonly in cooperation with healthcare providers.
- **Behaviour change/counteractive action:** Some e-health tools are intended to help a particular conduct change, for example, ceasing smoking or excessive drinking, beginning exercise, or getting a mammogram. Most counteractive action related devices are created through research with characterized target groups of onlookers under controlled conditions.
- **Health self-administration;** Consumers utilize health self-administration devices to accomplish and keep up solid conduct in different way of life zones, for example, eating pattern and

wellness. Some are promoted online specifically to buyers; others are marketed by bosses, wellbeing/health plans, and insurance agencies.

- **Online communities:** Web based groups encourage association around basic health worries among consumers, patients, or casual parental figures. Numerous online groups have various capabilities—giving social help, as well as trading healthcare data and encouraging decision making. Numerous ailment management tools and some with different capacities offer consumers an online community options.
- **Decision support.** The tools in this category provide structured support to consumers. Some tools support treatment decisions, such as weighing the tradeoffs between different cancer treatments. “Demand management” tools help consumers choose and evaluate insurance programs or healthcare providers. Managing healthcare benefits is a related e-health tool function. Demand and benefits management tools are growing in prominence as a function of prevailing “consumer-driven” strategies, such as health savings accounts.

1.3: AIM OF THE STUDY

The study aims at understanding and studying the consumer behavior towards e-health.

1.4: PURPOSE OF THE STUDY

Healthcare would be the space most impacted by digital India through better access to quality knowledge, clarity in understanding and greater transparency. There are several pain points in the healthcare system of our country, and the consumers are misled by multiple intermediaries due to their lack of knowledge

So, we require ways in which technology can help us solve our basic problems when it comes to the above mentioned pain points.

Technology can solve these problems in four fundamental ways:

1. **Access to Products/ Information/ Knowledge:** The internet is a sea of knowledge, and once a consumer is plugged in to this ocean of knowledge, he/she gets the power to make more informed choices. For example, a patient today is able to learn about their condition, treatment options, best practices and understand their condition and how best to manage it better (regardless of his location or his financial condition)
2. **Access to health services:** Through ePharmacy, eDiagnostics, eInsurance etc, consumers in different parts of the country can access medication at their doorstep, through a well tracked system which will strengthen authenticity in the supply chain, ensure better access, provide convenience to the patient and also make sure that the deep rooted issues of middlemen taking commission to procure medicines (often fake and without a bill) is addressed.
3. **Access to experts/ doctors:** The internet can create access to qualified specialists and doctors whom a consumer would otherwise not be able to physically access. Through telemedicine, a village dweller in the heart of India can access a top specialist anywhere in the large cities, or perhaps even globally through the digital connect. This will change the entire nexus of middlemen who thrive on taking poor villagers to random low quality hospitals for a fat commission, and then getting needless procedures done which ruin their livelihoods
4. **Transparency:** Online models for healthcare, be it access to doctors, pharmacy or diagnostics ensure there is all the information available at the patient's fingertips. Hence a consumer can compare prices, learn about more cost effective options and make sure they are not taken for a ride.

1.5: OBJECTIVES OF THE STUDY

- To explore the current level of consumer knowledge related to e-Health in the Indian Healthcare Sector.
- To understand the existing e-Health practices.
- Identifying the online sources of health information for the targeted customer.

2.REVIEW OF LITERATURE

According to Sandefer et al, there is significant relationship between the use of the Internet for conducting health-related searches and the use PHIM. This engagement is, however, impacted by a variety of demographic and health-related factors—“determinants of consumer eHealth.” Overall, the adoption of PHIM remains low, and to be successful, consumer health information technology must be designed to address the needs of people of varying ages, socio-economic status and geographic location. While many consumers are ready and willing to access their health information online, much less is known about consumer motivations related to personal health information management. The perspectives of a variety of consumers from diverse population groups are requisite to gaining an improved understanding of their personal health information management needs so that technologies that effectively capture and sustain their interest in managing their own health can be effectively designed and deployed.

The advisory report eHealth in zicht (‘eHealth in Sight’) and the accompanying background study Inzicht in eHealth (‘Insight into eHealth’) published in 2002 enjoyed an overwhelming response. It was a follow-up report to the advisory report concerning The Patient and the Internet, which focused on the possibilities for improving the quality, efficiency and the accessibility of healthcare through eHealth. The Council concluded that eHealth has the capacity to provide care providers at the right time and at the right place with the information they need to perform their tasks. Furthermore eHealth offers opportunities to improve the doctor-patient relationship and a greater freedom of choice for patients. It can also serve as means for meeting the growing demand for healthcare with the (increasing) scarcity of care providers on the labour market.

According to Yungfeng Shi and Kyoungrae Jung ,the association between healthcare access barriers and online health information seeking suggests that when healthcare needs are not met, people may have a high demand for online health information. Therefore, providing reliable health-related information online may help to meet the demand for such information, which is a potentially important self-care resource for those facing barriers to care access. In our study, people facing delays in getting appointments with physicians showed increased use of chat groups and email

communication with doctors. This increase may help explain, at least in part, the popularity of online platforms and portals that facilitate communication between patients and providers, as well as among patients having similar conditions that demonstrates the potential of patient web portals to improve the efficiency of care delivery and increase patient satisfaction.

According to R. Bratucu, seeking information makes individuals engage more in their medical decision making. The process itself helps consumers identify possible options, and at the same time, evaluate them, reduce uncertainty, doubt and encourage them to make a suitable decision. Actually, information seeking is identified as being a significant factor in an individual's decision process that has an impact on the engagement in healthy lifestyles and preventive behaviours. Although the information alone is not a proof that the individual has a healthy behaviour, acquiring adequate information might motivate him/her to engage in healthy practices. Thus, Health Information Seeking Behaviour might influence an individual's scope and nature of the information searched, on grounds such as judgments, beliefs and attitudes as well as on the number of alternative methods of action and knowledge against different risk perceptions and resources available. The health care consumer finds a true ally in the Internet because the health information is generally, easily organized by topic areas on health web sites and easily accessible whenever he/she needs a particular piece of information. Online health social networking sites can share the "wisdom of many". As such, health care social networking sites can shed light to personal stories, social norms and peer influence in order to help consumers understand the consequences of their behaviours on their health.

Hege K Andreassen et al, in her study explained that users of Internet health services differ from the general population when it comes to health and demographic variables. The most common way to use the Internet in health matters is to read information, second comes using the net to decide whether to see a doctor and to prepare for and follow up on doctors' appointments. Hence, health-related use of the Internet does affect patients' use of other health services, but it would appear to supplement rather than to replace other health services.

3. METHODOLOGY

- **STUDY DESIGN:**

A community-based cross-sectional descriptive schedule-based survey (quantitative). The survey included Well-Structured Questionnaire Containing Open-Ended as well as close-ended Questions to achieve the specific objective of the study.

- **STUDY SETTING:**

The study was conducted in New Delhi. It was designed and discussed at Doctor.e Health Services Private Limited which is located in Masjid Moth and the pretesting and sample collection was done at Akash Hospital, Malviya Nagar.

- **DURATION OF THE STUDY:**

The study was conducted for a period of 90 days (three months), from February'2018, to May 2018, till the completion of the desired sample size.

- **SAMPLE SIZE:**

Based on review of literature of similar studies conducted elsewhere in the country, the prevalence rate (p) of self-medication for calculation of sample size is taken as 50 percent.

Sample size is calculated using Cochran's formula:

$$n = Z^2 pq/e^2$$

Where,

n = desired sample size (when the population is greater than 10,000)

Z = the standard normal deviate, usually set at 1.96, which corresponds to 95% confidence level

p = the proportion in the target population estimated to have a particular characteristic

q = 1-p

e = desired level of precision (±5 percent)

Therefore, the sample size was calculated to be 200 patients

- **DATA COLLECTION PROCEDURE:**

Primary data: The data was collected by Face to face interview using a structured questionnaire. The format of the schedule was adapted from similar studies conducted earlier. The schedule contained open and close-ended questions pertaining to the socio-demographic details of the individual (name, age and gender) and questions related to concerns and selling points related to e-health.

Secondary data: The secondary data for this project was gathered through different dependable articles.

- **DATA ANALYSIS PROCEDURE:**

The data collected by respondents was analyzed using MS-Excel and the results of the data analysis is presented in the subsequent section of the report.

- **ETHICAL CONSIDERATIONS:**

An informed consent was taken before commencing the survey. The confidentiality of the respondents has been maintained. Respondents were assured that participation in the study is completely voluntary and participants can withdraw from study at any stage. The respondents were informed that the collected data would be shared only with the guide allotted for the study and that it is for academic purpose.

- **LIMITATIONS OF THE STUDY**

1. The time period of the study is limited to three months. The study may not be valid for a longer duration owing to rapid changes in the healthcare delivery systems and models.

2. Due to a limited amount of time and resources involved to carry out this study was restricted to a very limited sample size. The conclusions drawn from this study, hence, may have restrained application which means that it may be subject to biasness over regions but insights into a broader aspect of current healthcare trends pertaining to the elderly can be obtained from this study.

4.RESULTS

The present study was vivified by five questions identifying with e-health access, availability, suitability, acceptability, and conduct for different consumers in a pathology lab setting as a dimension for evaluating the phenomenon that is e-health. The investigation produced a set of findings that feature key zones for further examination, discussion, and vital action. Moreover, importantly, the conditions depicted in the findings are not fully settled; consumer e-health is liquid and still generally vague.

The questionnaire consisted of six questions that had several sub parts covering a comprehensive range of questions regarding the e-health aspect of this study.

The graphical representation of the study results is given below:

1. Is this visit for yourself or are you accompanying someone?

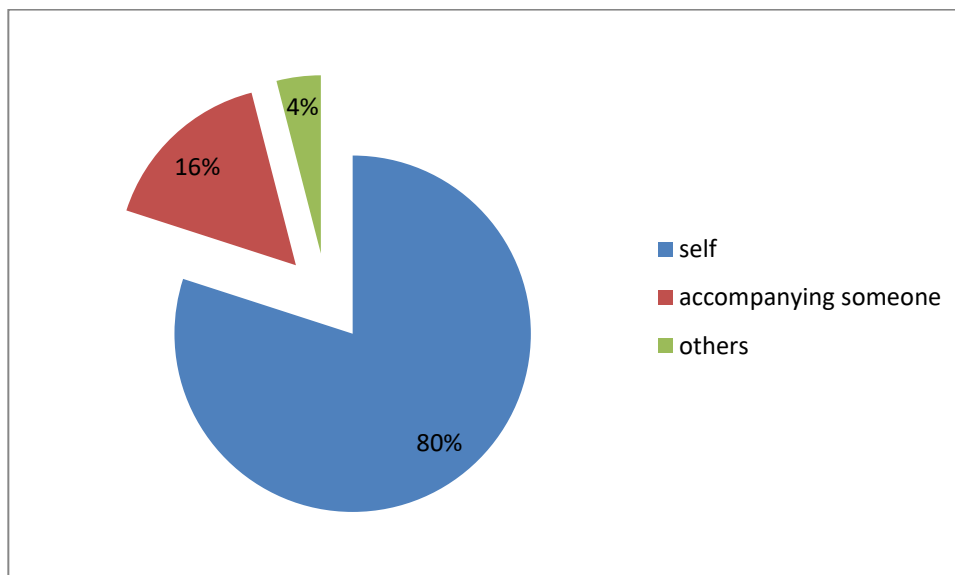


Figure 1: Percentage of categories of the respondents

2. What is the reason of your visit?

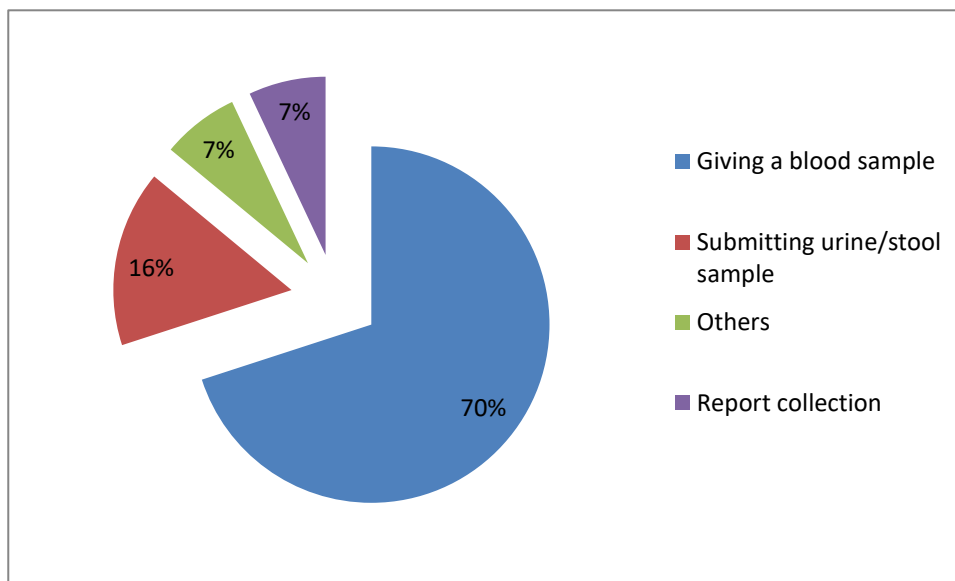


Figure 2: Reason of Visit of the Respondent

3. Out of all the number of choices given below which one is a vital factor for you while choosing a laboratory service? (CHOOSE ANY 5)

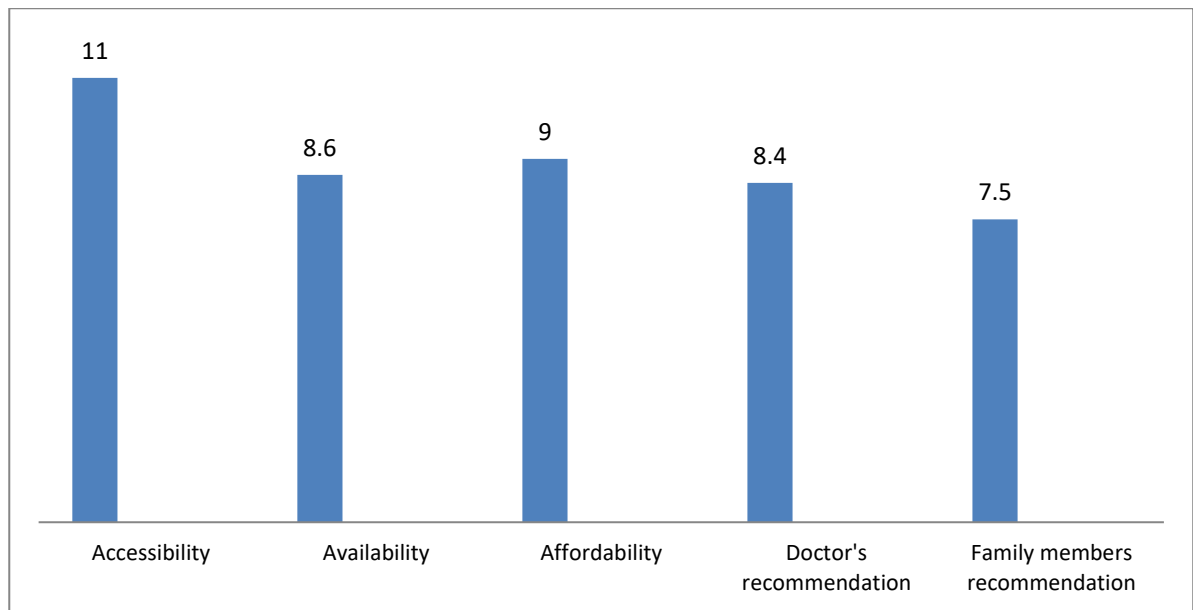


Figure 3: Vital Factor for Choosing a Laboratory Service

The top five choices i.e the rating average was calculated using a formula

$$\frac{x_1w_1 + x_2w_2 + x_3w_3 \dots x_nw_n}{\text{Total}}$$

where,

w = weight of answer choice

x = response count for answer choice

4. Before I mentioned it today, did you know that you could use software or online tools to manage your medical information such as appointments, lab test results, doctor's notes, etc?

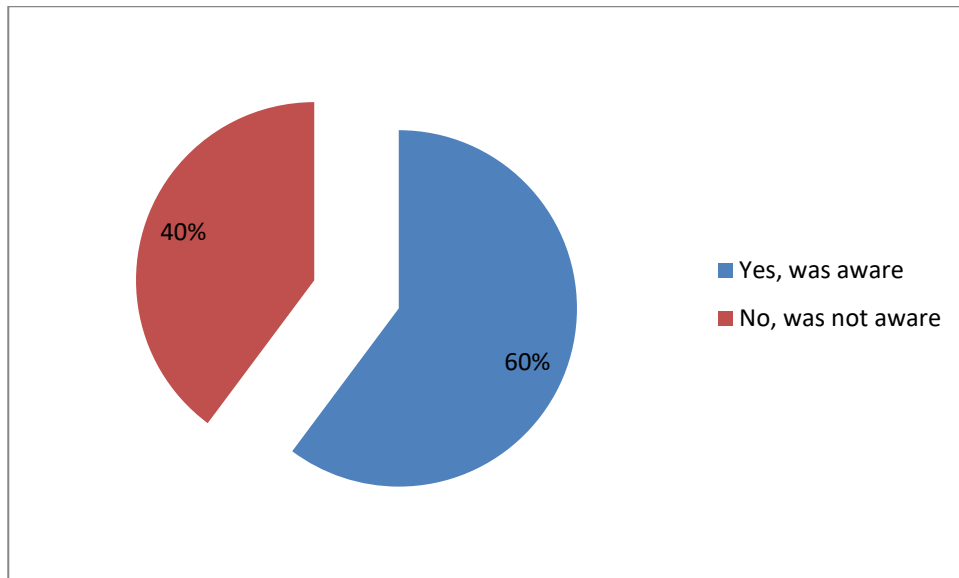


Figure 4: Respondents knowledge/awareness about e-health services/platforms

5. Have you ever ?

- **Consulted a doctor online**
- **Used a software or online tool to book or confirm you doctor appointment.**
- **Used a software or online tool to manage your receive your medical lab test result.**
- **Used a software or online tool to file doctors notes/diagnoses, prescriptions, etc. for future reference(whatsapp)**
- **Used a search engine (such as Google, Yahoo, etc) to find out which hospitals/labs/doctors exist in a particular area**
- **Used a search engine to find out which types of medical services a particular hospital or doctor provides**

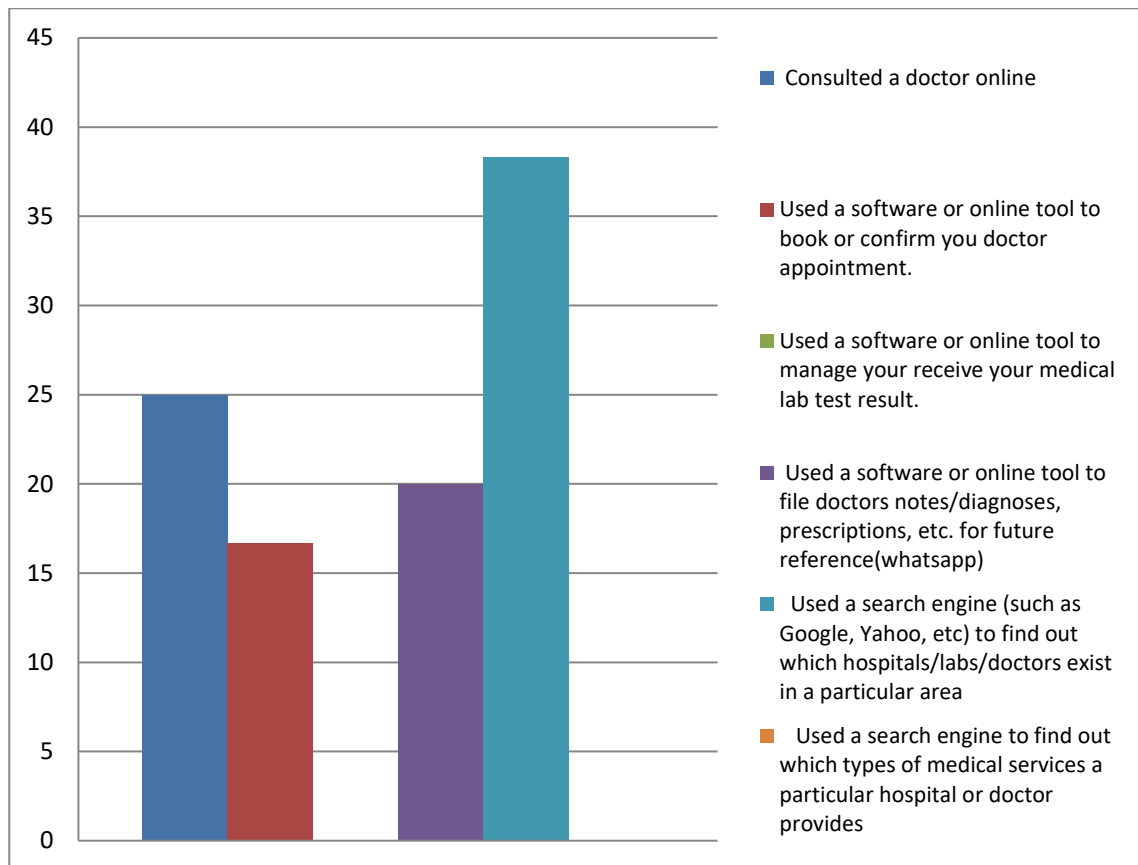


Figure 5 : Different uses of E-health Services by Respondents

6. Next I'll read out several statements about such e-Health online tools. As I read each, please tell me whether you completely agree with it, somewhat agree, neither agree nor disagree, somewhat disagree or completely disagree with that statement.

	Completel y Disagree	Somewh at Disagree	Neith er	Somewh at Agree	Comple tely Agree
I am not well versed with technology, therefore, e-Health is not useful for me	11	21	14	26	28
e-Health is NOT reliable because what if I	0	10.1	20.2	44.43	26.26

don't have internet access when I want to look for some information					
e- Health is not reliable because my data is not confidential and may be used by anyone	1	5	22	47	25
Physical interaction with a doctor cannot be replaced by e-interactions	1.01	9.09	23.23	41.41	26.25
e-Health is not reliable because all my saved data could be lost because of backup issues	3	7	19	50	21
e-Health tool makes it easy to book doctor appointments	1	11	24	24	40
e-Health tool makes it easy to collect and keep all my medical records in one place	2	14	24	22	38
With e-Health, I receive my lab test results much more quickly than the traditional way	3	11	23	29	34
e-Health makes it easy for me to share my medical records with other doctors or hospitals for follow-up consultation or to get a second opinion	3	11	23	27	36
With e-Health, I have complete access to my medical records instead of having to rely on a healthcare system to keep the records for me	3	11	23	29	34

Table 1 : General Behaviour of the Respondents towards E- Health

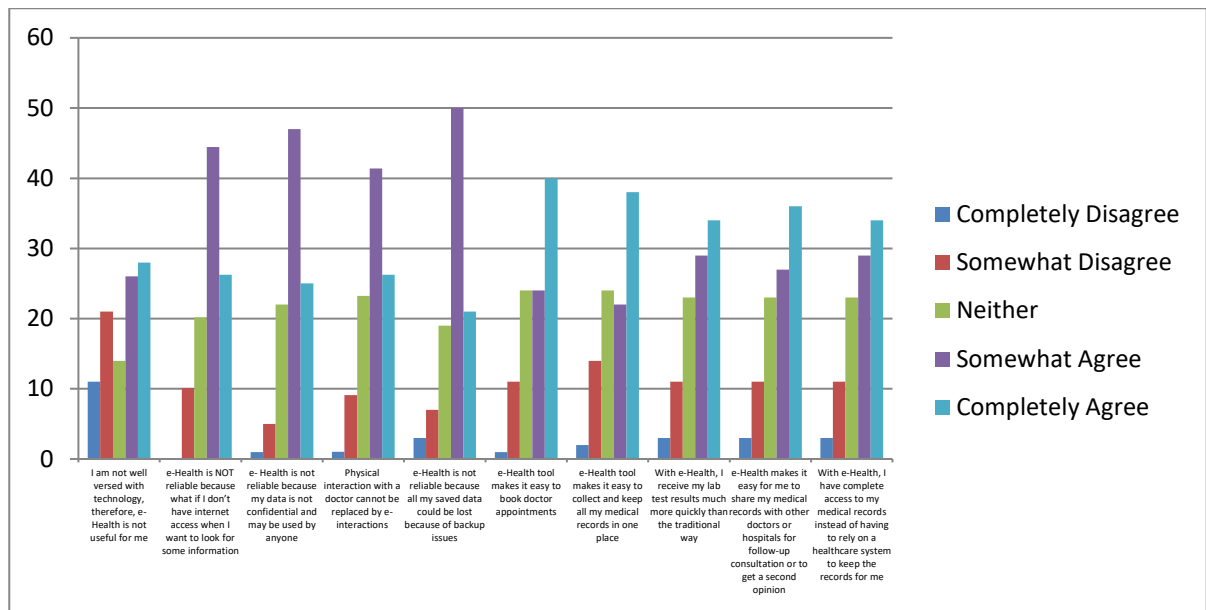


Figure 6 : General Behaviour of the Respondents towards E- Health

5.DISCUSSION

Based on the questionnaire filled by the respondents, the following points were inferences were made:

The age of the respondents varied from 18 years to 70 years with the highest percentage of respondents between the ages 25 to 45 years. A large number of the people in this age group are well versed with technology but had their concerns with using e health portals for their health concerns.

The findings suggest that the most common factor for choosing a lab is the accessibility of the lab from the patient's home or the doctor's clinic. Affordability, Availability, doctor's recommendation and recommendation from family and friends come second, third, fourth and fifth respectively. The relevance of the question was to get into the general thinking of the consumer regarding their preferences about using the laboratory services regardless of the fact that they provide electronic health services or not. It gets easier to position one's business and helps in devising useful business strategies based on the answers of the target population.

About 60 % of patients were aware that they could use software or online tools to manage their medical information such as appointments, lab test results, doctors notes, etc which mostly included the younger population and 40% were not aware of the same. This data can be different for different labs, localities and cities. The younger generation being more well versed with technology, are better at using the different avenues

Patients use these software and tools differently as per their use and need. Out of the 60% population that was aware of these tools, 25% had used these tools to consult a doctor online, 16% had used these software to book an appointment online and 20% used a software or online tool (whatsapp etc) to file doctors note/diagnosis, prescriptions etc for future reference. The remaining 38% has used a search engine (such as Google, yahoo etc) to find out which hospitals/laboratories/doctors exist in a particular area.

The fact that none of the respondents had used a software or online tool either to manage or receive medical lab test results or to find out which type of medical services does a particular hospital or doctor provide describes the gaps and the areas of work that still need to be managed or marketed to make the consumer aware of these services and removes doubts, if any, in using these services.

The final question had 10 subparts that were a mix of concerns and selling points of the use of the e-health facilities that play a role as the deciding factor in the mind of the consumer and therefore direct their behavior towards using various e-health applications and other tools.28% respondents

said that they were not well versed with technology therefore, e- health is not useful for them. 43.43% respondents agreed to e-health not being reliable because what if they don't have internet access when they want to look up for some information. 72% respondents felt that e-health is not reliable because of confidentiality issues. This has been a major concern of most of the respondents throughout the survey. 66% people agreed to the fact that physical interaction with the doctor cannot be replaced by e-interactions. Patients worldwide have this issue with consulting doctors online because of the touch and feel factor that has a placebo effect on the patient and also it helps the doctor to diagnose the patient better. 71% of the respondents said that they feel that their data could be lost due to backup issues with these e-health related apps and tools. 63% people agreed to the fact that they receive lab test results much more quickly than the traditional way and that ehealth avenues make it easier for them to share their medical records with other doctors or hospitals for follow up consultations or to get a second opinion. 63% people also agree to the fact that e-health tools and apps help them have complete access of their medical records instead of having to rely on a healthcare system to keep the records for them.

6.CONCLUSION

Most industries in India have by now made significant progress in the edomain. One notable exception is healthcare. Though India is making a notable progress in ICT sector, still many people here are unaware of ICT. In the perspective that we take the general point of view of utilization of IT by hospitals and other healthcare avenues in India, we find that IT is still at an exceptionally entry-level stage in this industry vertical. Research done by Springboard on IT in healthcare industry, says that union of IT system is the best most torment point in the healthcare space. Investments to be done on IT framework and absence of IT expertise are two different bottlenecks that healthcare firm faces.

.People in India still have many superstitions about health care. Many countryside people still approach some tantriks and babas for the cure of their diseases. So it is crystal-clear that they will be having no interest towards ehealth. The remaining people who are educated and prefer doctors are having less knowledge of ICT and they are not snug with electronic solutions for health. The major problem in conducting e-Health practices in rustic area is lack of electronic and other equipments and services. Even Internet facility is also unavailable in most of these areas. So it is difficult to run e-health practices there.

Many people in urban area are not comfortable with e-Health services. They still wish to follow traditional methods of health care, especially senior citizens who are not much attentive with new technologies. They still wish doctors to handle them and check them in a traditional way. Many people are pretty uncertain about whether to apply e-Health on themselves or not. They appreciate modern concept of cure of health electronically, also they see the future growth of this arena but they are not ready to apply these techniques on themselves. The younger generation is keen on using these services but they still point out that e-health would never be able to fill in the gap when it comes to the touch and feel factor of visiting a doctor. Very few are enthusiastically agreed with e-Health and welcome it, especially those who are having good knowledge of technology. With enhancements in ICT sector, we can expect a good future of e-health with consumerrrs.

7.RECOMMENDATIONS

- Integrated healthcare delivery should be developed through efficient processes\workflows\marketing and positioning strategies with focus on improving customer experience
- **AWARENESS:**
 - The doctors should be made aware of the various benefits of using health apps and other tools so that they can further spread awareness amongst the consumers i.e. the patients.
 - Concessions on various consultations, tests etc if appointment for doctors and lab tests are booked.
 - The app should be informative and updated for consumer attention and attraction.
- **USER CONTROL:**
 - Users define what information they want, when and how; owners of data decide who views it. A patient should be the ultimate owner of his or her medical records like prescriptions and lab tests and should have full control in deciding which third entity can access his or her records.
- **CONFIDENTIALITY POLICIES**
 - Unique patient identification in different care settings to tackle the issue of confidentiality, for example Aadhar cards could be linked to specific e-health portals.
 - Protocols that are extendible and based on industry standards so there is no discrepancy of protocols or policies
- **INTERNET CONNECTIVITY**
 - The physical infrastructure should be targeted to use mobile connectivity in even if the network is not available. The ability to perform some basic functions while in offline mode and update the information with the main server as soon as it re-establishes a connection should exist.

8. BIBLIOGRAPHY

- In eHealth in India today, the nature of work, the challenges and the finances: an interview-based study [Szymon Jarosławski](#) and [Gayatri Saberwal](#)
- <https://health.economictimes.indiatimes.com/news/health-it/five-apps-that-revolutionised-healthcare-in-india/62411930>
- Delivering e-health in India–Analysis and Recommendation-
<http://www.indiamedicaltimes.com/wp-content/uploads/2014/02/Delivering-e-Health-13th-January-2014.pdf>
- eHealth for India: Reaching the Unreached Report of the Fifth Annual Joint Roundtable on Communications Policy by Knowledgefaber and Rapporteur
- <https://www.americanmobile.com/nursezone/nursing-news/7-top-patient-apps-in-ehealth/>
- Health Information, The Internet, And The Digital Divide by Mollyann Brodie, Rebecca E. Flournoy, Drew E. Altman, Robert J. Blendon, John M. Benson, and Marcus D. Rosenbaum
- Modeling Patients' Acceptance of Provider-delivered E-health by E. Vance Wilson, PhD [Nancy K. Lankton, PhD](#)
- European citizens' use of E-health services: A study of seven countries
by Hege K Andreassen, Maria M Bujnowska-Fedak, Catherine E Chronaki, and Roxana C Dumitru
- Perceived risk, health and consumer behaviour
<https://www.tandfonline.com/doi/abs/10.1080/136698799376790> A literature review on health information seeking behaviour on the web: a health consumer and health professional perspective.

ANNEXURE

USER SATISFACTION FEEDBACK

INTRODUCTION

Hi.

My name is _____

I am doing a survey for laboratories so that they can upgrade service quality they provide to patients. Through this survey, I am also working towards evaluating awareness about e-services in the healthcare sector. This survey would take about 5-6 minutes to complete. Be assured that your answers will be kept confidential and detailed just in total.

Q1. Is this visit for yourself or are you accompanying someone?

- ☐ Self
- ☐ Accompanying someone : _____ (Relation with the patient)

Q2. What is the reason of your visit?

- ☐ Getting investigation done
 - ☐ Giving a Blood sample
 - ☐ Submitting a Urine/Stool sample
 - Others
- ☐ Report Collection
- ☐ Something else (_____)

Q3. Out of all the number of choices given below which one is a vital factor for you while choosing a laboratory service? (CHOOSE ANY 5)

- ☐ Availability (24x7 service) of the service
- ☐ Accessibility of the facility
- ☐ Affordability of the service
- ☐ Reputation of the lab
- ☐ Recommended by family/friends
- ☐ Online delivery of reports
- ☐ Availability to book appointments online through App/Software

- ☐ Because I have visited this lab previously
- ☐ It was recommended / referred by a doctor
- ☐ It has very good technicians and doctors
- ☐ The staff is friendly and takes care of patients
- ☐ They have past medical records for the patient.
- ☐ Something else (_____)

Q4. Before I mentioned it today, did you know that you could use software or online tools to manage your medical information such as appointments, lab test results, doctors notes, etc?

- ☐ Yes, was aware
- ☐ No, was not aware

Q5. Have you ever ?

- ☐ Consulted a doctor online
- ☐ Used a software or online tool to book or confirm you doctor appointment.
- ☐ Used a software or online tool to manage your receive your medical lab test result.
- ☐ Used a software or online tool to file doctors notes/diagnoses, prescriptions, etc. for future reference(whatsapp)
- ☐ Used a search engine (such as Google, Yahoo, etc) to find out which hospitals/labs/doctors exist in a particular area
- ☐ Used a search engine to find out which types of medical services a particular hospital or doctor provides

Q6. Next I'll read out several statements about such e-Health online tools. As I read each, please tell me whether you completely agree with it, somewhat agree, neither agree nor disagree, somewhat disagree or completely disagree with that statement.

Concerns:

	Completely Agree	Somewhat Agree	Neither	Somewhat Disagree	Completely Disagree

I am not well versed with technology, therefore, e-Health is not useful for me	5	4	3	2	1
e-Health is NOT reliable because what if I don't have internet access when I want to look for some information	5	4	3	2	1
e- Health is not reliable because my data is not confidential and may be used by anyone	5	4	3	2	1
Physical interaction with a doctor cannot be replaced by e-interactions	5	4	3	2	1
e-Health is not reliable because all my saved data could be lost because of backup issues	5	4	3	2	1

Selling Points:

	Completely Agree	Somewhat Agree	Neither	Somewhat Disagree	Completely Disagree
e-Health tool makes it easy to book doctor appointments	5	4	3	2	1
e-Health tool makes it easy to collect and keep all my medical records in one place	5	4	3	2	1
With e-Health, I receive my lab test results much more quickly than the traditional	5	4	3	2	1

way					
e-Health makes it easy for me to share my medical records with other doctors or hospitals for follow-up consultation or to get a second opinion	5	4	3	2	1
With e-Health, I have complete access to my medical records instead of having to rely on a healthcare system to keep the records for me	5	4	3	2	1

Thank you so much for completing the survey. I would like to know a little about you:

NAME:

AGE:

GENDER:

LOCALITY:

EMAIL-ID:

