

**HOW TECHNOLOGY HAS IMPROVED HEALTHCARE OR
MEDICINE WAYS TECHNOLOGY HAS CHANGED**



HEALTHCARE
Essay support
A Complete E-Learning Solution

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1. Introduction

Technologies drive improvements in the field of healthcare and medicines. Implementation of technology has influenced not only the medical science but also perception relating to social support. Introduction of various software and different machines have made lives of patients better. The advancement of technology has helped discovering vaccines and medicines that can now cure deadliest of diseases. This study deals with the benefits of technology in the health care systems. It also focuses on different types of technical innovations in the health care systems. Considering the recent innovations and changes, it can be recognised that technology plays important role in developing the health care systems. Critical diseases such as cancer, HIV aids and others have discovered its cure in early stage of the disease. It explores the health care issues that are caused due to virus outbreaks. The study effectively discusses ways technology has proven to be beneficial in the elimination of the deadliest possibilities of the virus attacks. In order to effectively discuss it, contribution of technology in the field of medicines has also been discussed. Relevant models and theories mentioned in this study facilitate understanding of effectiveness of technology in dealing with health issues. The comprehensiveness and credibility of this work, nevertheless, stands on the ability of researcher in laying sincere attention to different aspect of this research; starting from setting the objectives to developing concluding statements.

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2. Benefits of technology in health care systems

2.1 The gift of internet

According to Sultan (2015), with the rise of technology, internet has become a major source of medical information. It has been estimated that more than 65% of the senior medical practitioners search internet for information regarding health care information. Internet is widely used in order to learn about any new virus outbreaks or for the possible treatments. According to Hu (2015), internet has proven to be a medical guide for millions of people. Internet has made people across the world more aware regarding different types of health issues and has resulted in following of healthy practises. In the view of Marful and Winter (2015), it can be said that people across the world relates their symptoms and check online for the treatments and medicines. Internet has also given rise to the online medical services such as online ordering of medicines and equipments. These facilities have made the lives of people better. It has become possible for the elderly people to order medicines from their homes and not worry regarding going far to buy those medicines. According to Pino *et al.*

(2015), internet has made patients across the world more empowered regarding the making of decisions regarding what needs to be done further. People can check better hospital facilities and the availability of treatment options. They can even compare the different options that are available to them. The online platforms have given the patients to have a knowledge regarding the review of the hospital services and facilities, based on which they can opt in or opt out of certain medical centres.

2.2 The usage of social media to reach out to patients

According to White (2017), social media has made it possible for the doctors, public clinics and so on to reach out to a wide number of patients. Social media nowadays have a very important role to play in order to establish contact with its patients. Technology has given doctors and medical practitioners, the opportunity to connect with the patients through the means of the social networking sites. According to Bussenius *et al.* (2013), doctors and nurses use social media tools in order to, answer the queries from the patients regarding following of certain practices. This has indeed made the lives of the patients very easier. The health practises are also been initiated in the social networking sites. As per Kumar (2017), there are many health care centres and hospitals, which provides online support such as chat options to their patients. “The network organizes patient participation in ways that break with the strong expert culture of medical research” (Kallinikos and Tempini, 2014). The chats and support from the nurse helps the patients to report regarding their health conditions and for other requirements. The patient also receives reminder calls and messages from the health centres regarding their next visit. Medical communities and health care systems have evidently launched certain medical campaigns in order to make the public aware regarding many deadliest virus outbreaks such as Zika Virus, Ebola and so on (Turcu, 2017). This awareness has led to the taking precautions and following of effective measures by the people so, that they can avoid being affected by these viruses. In the view of Nguyen and Gorter (2014), many doctors and medical practitioners considers Facebook Live to be very effective to teach and provide patients and colleagues the information, that is not available to them. The patients that stay in countrysides are often not aware regarding the various types of equipments such as insulin pump and so on to treat diseases that can later prove to be fatal. In such cases, Facebook Live play an important role to reach out to such audiences.

2.3 Better treatment facilities and little suffering

According to Amendola *et al.* (2014), technology have given rise to many medicines, facilities, treatments and machines and have changed the health care systems. It has also improved the chances of recovery of billions of people. Technology has increased the life expectancy rate in all the countries across the world. As per Olaniyi *et al.* (2015), the treatment of the deadliest diseases, such as cancer, AIDS and many more are now possible because of advancement of technology. Technology has also improved the research and has made the research for the treatments and medicines more competitive and challenging. This has made new discoveries and inventions to be at very face pace. Technology has given the humankind the pacemakers, which can make the heartbeat; it has generated the concepts of dialysis, which helps the kidneys to function effectively. According to Lindberg *et al.* (2013), the concept of surrogacy and test babies were not even thought of in the 18th century. This All these are possible because of advancement in the technology.

2.4 Improved worker efficiency and patient care

In the view of Kumar *et al.* (2014), technology has made the care systems for the patents to be much more reliable and safe than before. The medical institutions nowadays have complete knowledge of the medical history of the patients. This has made it easier for the doctors and the medical practitioners to analyse the case of the patients and to suggest the most suitable treatments that will be beneficial for them. According to Groves *et al.* (2016), computer systems with some advanced software have the potential to tell whether a certain treatment will prove to be effective or not for a specific patient. These systems have the power to administer the correct treatment. According to Rao *et al.* (2014), there are certain software which helps in analysing all the lab results and various symptoms and detects the causes and advises the medication. The technology has made the job of the employees easier in the health care systems as details regarding the medicine orders, vital signs and so on can be put together in the computer systems in the form of database. According to Piscotty *et al.* (2015), in order to retrieve certain information, one is not required to go through lots of files and folders. Data can be retrieved with lot of ease. According to Diwani and Sam (2014), many health care systems have adopted and maintained electronic health records. This helps the patients to have complete access to their own personal information. They get complete information regarding what all have been done to them. The database helps in the efficient working of the workforce in the health care systems. This also results in taking better care of

the patients. According to Diwani and Sam (2014), large databases help in the fields of research and developments. Medical scientists study the history of the patients; this makes them to study the trends and causes of the ailments in a better way.

2.5 Effective for the doctors for making better decisions

According to Cresswell and Sheikh (2013), technology have given the doctors access to thousands of medical textbooks, they can study and learn from these and use the medical database that is available to them. The detailed patient history that is available to them on the online platforms helps them in the proper treatment of the diseases. As per Cranfield *et al.* (2015), there are certain diseases, whose vaccines and medicines are not available in every part of the world. The doctors in those places can check the online sources and can take assistance from the other specialists with the help of the online platforms. In the view of Bhattacharya and Ramachandran (2015), there are certain virus attacks that have had mass destruction. The knowledge and support regarding these epidemics such as Ebola, Zika and so on can be found on the online platforms. According to Cresswell *et al.* (2013), technology has given rise to the usage of emails, digital conferences and so on to the doctors and the medical practitioners. “‘Outcome measures’, though they actually measure health—by comparing a patient’s health at different times, the outcome of the care received can be determined” (Black, 2013). The practise of telemedicine, has very proven to be very effective in the rural and the under developed parts. Technology has made to possible to diagnose the patients without moving them, as in this case the doctors can consult various experts across the globe to have suggestions regarding diagnosis without shifting the patients to some sophisticated hospitals.

3. Different types of technological innovations in health care systems

3.1 Prediction of medical trends from the online databases

According to Marful and Winter (2015), technology have given rise to some of the very innovative systems such as Google Flu trends. The medical trends are accurately predicted by analysing the search topics in the search engines by the different users. As per Lindberg *et al.* (2013), Google effectively predicts the medical trends and effectively results its prediction in the form of flu outbreaks. This prediction is actually based upon the flu related queries by different users. According to Lindberg *et al.* (2013), it is estimated that these trends are very

much accurate as the trend graph increases in the season, in which that specific disease is reported to be the highest. “There is no set definition of innovation. It’s a concept where everyone has an intuitive sense of what innovation is, but would have a hard time formalizing a definition” (Page, 2014). These predictions are very helpful for the medical practitioners as they can study these predicted medical trends based on which they can take preventive measures and make their patients aware. According to Bussenius *et al.* (2013), internet has made more and more people to be more aware and conscious regarding their health. Now majority of the population have knowledge regarding the basic medications that they need to follow in case of emergencies.

3.2 The electronic health record

According to Cranfield *et al.* (2015), more than 85% of the hospitals in UK use electronic health records. Electronic health systems are the systems that maintain all the work of different system. It means that the hospitals will not require different disparate systems in order to take orders and do documentation. Electronic health records helps in maintaining the records of the pharmacy and at the same time it takes in the orders along with making the documentation. According to Bhattacharya and Ramachandran (2015), as the electronic health records systems have integrated data on the single platforms, it helps in effectively taking care of the patients. As per Marful and Winter (2015), the electronic health records have created big strides by centralising and effectively maintain the information of the patients. This electronic health record can be efficiently used in order to use as a form of data and population health tool for the future usage. This will definitely create a huge cultural shift in the next few years of data driven medicine.

3.3 The innovative mHealth

According to Bussenius *et al.* (2013), mobile health, which is better known as mHealth is something that enables the patients as well as the physicians to check the healthcare processes without needing health care devices that contains a massive number of wires and cords. It has been estimated that the mHealth will reach to a mark of earning \$20.8 billion by the end of 2019. Hence, it can be said that the global mHealth market will become huge and prevalent. In the view of Groves *et al.* (2016), tablets and smart phones permits the health care providers to access and send the information with more ease. These tools can be effectively helped the providers and the service providers to efficiently document and to reach out to their patients.

As per Cranfield *et al.* (2015), mHealth has permitted patients to be active players in their own treatment wherein they effectively communicate with the usage of biometrics. Data from the mHealth can be efficiently put up in the smart phones, where it can be transferred wirelessly.

3.4 Telemedicine or telehealth

As per Bussenius *et al.* (2013), telehealth is beneficial in the areas, where the some important resources cannot be accessed as it can be accessed from the metropolitan areas. According to Cranfield *et al.* (2015), the practise of telemedicine, has very proven to be very effective in the rural and the under developed parts. Technology has made to possible to diagnose the patients without moving them, as in this case the doctors can consult various experts across the globe to have suggestions regarding diagnosis without shifting the patients to some sophisticated hospitals. According to Marful and Winter (2015), a recent CHEST report demonstrated that ICU's that are equipped with telehealth services have the potential of discharging their patients 20% more faster as compared to the ICUs that do not have installed telehealth services. As per Lindberg *et al.* (2013), the mortality rate of the ICUs equipped with telehealth services are 26% lower as compared to the ICUs that do not have installed telehealth services. In the view of Groves *et al.* (2016), telehealth services have a huge scope of development and innovation. These can be used in those places, which are experiencing epidemic threats or virus attacks. Telehealth services have proven to be useful in diagnosing the patients been affected by Ebola virus. According to Cranfield *et al.* (2015), video consultations programs have been planned to get arranged in order to assess the patient through the means of video chat with the physicians.

3.5 Portal technologies

According to Bussenius *et al.* (2013), portal technology has become extremely popular and the patients from all the part of the world are actively using this in order to take care of their health. This is the technology that readily helps the patients and the physicians to have an accessed to the medical records on the online platforms. As per Marful and Winter (2015), the portal technology have permitted the patients across the globe to be more involved and more knowledgeable regarding their own health. With the help of portal technology, the patients have been able to easily access and avail the medical information with more ease. In addition, this technology have it has presented itself to be a source of empowerment and have

made the patients more responsible towards their health. In the view of Bhattacharya and Ramachandran (2015), portal technology effectively adds a degree of power in the health care. It have proven to be an extraordinary ally in the patient's care for themselves.

3.6 Self service kiosks:

According to Groves *et al.* (2016), self service kiosks helps in the process of expediting the procedures such as registration in hospitals. It helps in the process of hospital registration without taking help from anyone. In the view of Cranfield *et al.* (2015), self service kiosks have helped the hospitals to hire few less staffs as no assistance are required for the registration process. Self service kiosks have automated services and kiosks, which helps the patients in payment of co pays, doing the required paper works and for meeting other requirements for the registration procedure. According to Marful and Winter (2015), self service kiosks are also available in tablet variations which permits to be used as outpatient and bed setting. In contrast Bhattacharya and Ramachandran (2015), feels that, human communication also plays a major part in order to deal with the patients as sometimes patients wants to speak rather that filling in their details in a system. Hence, it can be said that human communication is equally important as self service kiosks and its importance should not be ignored.

3.7 Remote monitoring tools

According to Bhattacharya and Ramachandran (2015), more than 3.7 million people utilise monitoring tools in order to monitor their health from their home. This effectively reduces their cost that they has to pay if they had to visit the health clinics to monitor the same. As per Bussenius *et al.* (2013), remote monitoring tools have proven to be great for the patients suffering from chronic and serious illness. It has been estimated the rate of the heart disease patients fell by 2% after the initial installation of the home monitoring systems.

3.8 Sensors and wearable gadgets:

It has been estimated that the market for wearing medical devices is hugely growing at a rate of 16.4% (Bhattacharya and Ramachandran, 2015). According to Groves *et al.* (2016), wearable health sensors and gadgets are simply designed to collect data. These gadgets sends an alert to the care provider in the situation when the patient wearing it falls down or gets impacted with any health issues. This has effectively reduced some fatal attacks as the alert

have made the care provider available to the patient and the patient have been admitted in the hospital immediately.

3.9 Real time locating services:

According to Cranfield *et al.* (2015), data monitoring and real time locating services are proving to be very helpful in focusing on the efficiencies and it has efficiently identified the problem areas. According to Groves *et al.* (2016), real time locating services have been helpful for the management of the staffs for the health care centres. As they will be able to instantly connect with the doctors, nurses at anytime, and anywhere.

4. Different healthcare issues that are caused by the virus outbreaks

4.1 Health issues caused by Zika virus

According to Rohit (2015), Zika is a disease that is majorly caused by the bite of an infected mosquito of *Aedes* species that is scientifically known as *Ae. aegypti*. The infected mosquitoes have the chances of biting during any time of day and night. The virus that is spread with the bite of infected mosquito can prove to be very dangerous. This virus is passed on to the foetus if the infected mosquito bites the pregnant woman. According to Konyzhev (2013), there is no vaccine that have been developed for the prevention of Zika. The expansion of this virus has been largely reported in the parts of United Kingdom. Many health issues arise during the course of pregnancy. “Given the current spread of the virus, obstetric health care providers need to know about Zika virus and its potential effects during pregnancy” (Meaney-Delman *et al.* 2016). If the infected mosquito bites the pregnant mothers then it has the possibilities of causing serious birth defects or can result in many other pregnancy problems. According to Pytte (2012), Zika virus has impacted many countries recently are the people suffering to Guillain-Barre syndrome or better known as GBS are evidently more prone to Zika virus. GBS is a deadly disease and is very much related to the Zika virus. These health issues have proven to be worse than fatal. According to Chinthagunta (2015), technological innovation have reached certain heights but have not been able to discover the vaccine related to it. Hence, it can be said that technological innovations are much more required in order to eliminate the impact the health issues that are caused by the Zika virus.

4.2 Health issues caused by Ebola virus

According to Olaniyi *et al.* (2015), Ebola virus disease is a very rare disease that is caused by the Ebola virus. It is a very serious disease that causes serious infection. It got its name from the Ebola River. The health issues that are caused by this disease are numerous and it has been estimated that the disease has proved to be fatal for more than 50% of the people infected by it. As per Kumar *et al.* (2014), early symptoms of this infection are very high fever, sore throat, weakness along with extreme fatigue. The symptoms later get transformed into serious vomiting, stomach pain along with unexplained bleeding. In the view of Marful and Winter (2015), Ebola virus is not caused with indirect contact but is caused with only direct contact such as transfer of blood from an infected person to a healthy person. Usage of contaminated needles or syringes can also spread the disease.

Early symptoms of Ebola virus
<ul style="list-style-type: none">• Very high fever• Sore throat• Weakness• Extreme fatigue

Table 1: Early symptoms of Ebola virus

(Source: Kumar *et al.* 2014)

Later symptoms of Ebola virus
Vomiting
Stomach pain
Unexplained bleeding

Table 2: Later symptoms of Ebola virus

(Source: Kumar *et al.* 2014)

5. How technology is beneficial in eliminating worst-case scenarios of virus attacks

5.2 Utilisation of technology to battle Zika

According to Rao *et al.* (2014), technology has still not been able to develop a vaccine for Zika virus. In the view of Kumar *et al.* (2014), very recently, a new research have been able to brought a rare drug that can be used to stop the spread of this virus. Technology have helped in the early identification of the this virus. In the view of Olaniyi *et al.* (2015), digital data are constantly in usage for the identification of high risk groups so that solutions can be designed advance for them to prevent the spread of this outbreak. This has somewhat halted the spread of this virus within a specific geographical area. According to Marful and Winter (2015), various algorithms have been developed and have been utilised to assist the health workers to strategize for the identification of the treatment of Zika patients. Technology has been helpful in the identification of the patients through the means of online reporting systems that have been developed in order to report cases of Zika virus. In the view of Olaniyi *et al.* (2015), technology has helped in the process of data collection and sharing. It has helped in the process of minimising the impact of Zika virus in the unborn babies. According to Rao *et al.* (2014), a technology have been developed, which can efficient utilise the technique of genetic editing that can force the infected mosquitoes to breed themselves. This will help in the reduction of creation of female offspring. According to Marful and Winter (2015), the technology of genetic editing technique have not been used yet. This will require 4 to 5 more years to put into usage. According to Pino *et al.* (2015), online platforms have proven to be of great help in making the people in the risk zones to be aware of the spread of this disease. The social media networking sites such as Facebook and Twitter have constantly instructed and suggested the women in the high-risk zones to delay their pregnancies in order to decrease the impact of the Zika virus.

5.1 Utilisation of technology to battle Ebola

According to Rao *et al.* (2014), information and communication in the health care systems have played a very important role in battling the issues caused by Ebola virus. Technology has proven to be very effective with the usage of mapping and geo location. In the view of Diwani and Sam (2014), one of the vital task was to trace all the contacts with whom the infected person has been in touch with. This issue was very effectively been dealt with the team that developed humanitarian openstreetmap since the beginning of the Ebola response.

According to Pino *et al.* (2015), a team known as standby task force has also helped by helping in the process of collection, cleaning, and verification of data regarding the health facilities that are provided in the countries that are affected by the Ebola virus. In the view of Bussenius *et al.* (2013), technology have been also helpful in the field of data collection through digital collection forms. The tracing of the infected people was previously based on writing data on sheets after interviewing, which has been transformed into filling in the details through computer or phones, which is nor more fast and is not error prone. These digital forms are free and are available in Kobo toolbox (Healthinformatics.uic.edu, 2016).

According to Olaniyi *et al.* (2015), technology has also made it possible to connect with the friends and families of the infected people with the help of the wifi networks. Isolation impacts the patient negatively, this impacts their health as it creates a psychological imbalance. The video calls through wifi helps the patients to be connected with their friends and relatives and this eradicates their boredom and isolation. According to Diwani and Sam (2014), the sharing and receiving of information regarding Ebola virus through the means of SMS have been of great help as it had made people aware. mHero is a very well known SMS system that is designed with the help of UNICEF rapidPro system in order to share information with the health workers (Online.king.edu, 2017).

6. Contribution of technology in medicines for virus attacks

In today's modern world, technology has covered a wide range of medical field in context to virus attack. With the development of advanced technologies, significant change in the studies of medical science has been observed. Biotechnology, pharmaceuticals areas have developed due to the advancement of technology into medical science. However, virus attacks into the immune system of a human body can also be cured with the latest medicines. Viruses as known produce multiple viruses like them inside the human body. They enter the host cell and release their DNA or RNA inside the host cell of the human body. Once this DNA enters the host cell, they replicate the virus, leading to the illness of the person. According to Duffy *et al.* (2013), there are various types of viral infections, among which most common are related to respiratory infection.

The symptoms include headache, influenza, high fever, sore throat and cold. Previously, diagnosis of these viral infections was not possible as the symptoms were common and people used to neglect those. Diagnostic test such as blood test for checking of antibodies to viruses took 2-3 days for the results, leading to the severe condition of the patient.

Diagnostics have never been so easy as well as accurate since, the advancement of technology into medical science; these problems can be resolved now in less time span (Evans, 2013). Without any doubt, people's health and improvement in the quality of the life is due to the latest medicines easily available in the market.

Magnetic resonance imaging (MRI) has increased the result of detecting viral infection. Not only detection of the virus has become easy but also its cure. Various antiviral drugs have developed in treating viral infections. HIV, hepatitis B, herpes viruses, hepatitis C and other such viruses did not have any cure previously. However, with the help of antiviral drugs, it has become available to deal with such viruses. However, HIV infection cannot be cured but due to medical technology, virus can be stopped from multiplying and further increase in the disease.

From recent studies, it was found that viruses like Ebola and Zika were spreading in most of the parts of UK. Virus like Ebola has taken so many lives in the history of medical science. However, with the introduction of nanotechnology, scientists have found the cure for it up to some extent. As suggested by Blaikie *et al.* (2014), nanoparticles have the ability to transfer medicines and drugs into specific part of the human body. This innovation has contributed in the field of medical science. Apart from this, various medicines are now available to cure the viruses of Ebola and Zika up to some extent, though it not curable. Treatment such as serum that destroys the infected cell, electrolytes and fluids, medication of blood pressure is introduced to manage the symptoms of Ebola. Virus such Zika has no specific medicine or vaccine to cure, but medicines are available to manage the symptoms to an extent. Medicine such as acetaminophen is used for reducing fever and pain generated from the disease. Fluid drinks and medicines are available for preventing symptoms like dehydration for Zika affected victim.

7. Models and theories to analyse the impact of technology

7.1 Technology acceptance model

One of the commonly known models related to the acceptance of technology and its uses is- Technology Acceptance Model (TAM). As asserted by Haimes (2015), the model was able to prove to be an ideal theoretical model in explaining the behaviour of information technology. According to Bussenius *et al.* (2013), the technology acceptance model is a model that is widely used in business adapting to information technology. This model can also be effectively used in having

knowledge of the impacts of technology in the innovation and performance in the health care systems across the world. This model focuses on the points, which makes a new technical gadget or technology be acceptable to its users or employees. The use of this model can be stressed on the adaptation of technology in order to develop and innovate equipments in the healthcare. Following to the guidelines of this model will let the eradication of many healthcare issues that are caused by the virus attacks.



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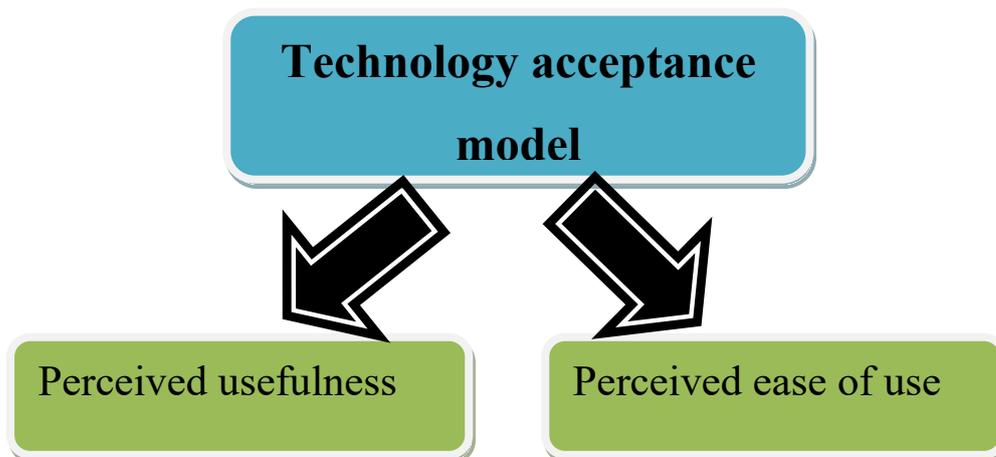


Figure 1: Technology acceptance model

(Source: Created by the author)

This model focuses on the usage and adoption of technology in order to innovate the medical equipments and medicines for better diagnosis. As per this theory, multiple factors influence the decisions of adaption of technology. The health care centres and medical researches needs to consider two major factors in order to efficiently adapt technology and apply it to the medical procedures. According to Olaniyi *et al.* (2015), many countries across the world have successfully established technological innovation in their healthcare schemes and equipments by being adhering to the technology acceptance model. The model states that the adaption of technology depends upon the perceived usefulness of the technology and its perceived ease of use. Hence, the healthcare centres adhering to this model have fully focused on these two factors. This is evident in many national healthcare centres such as NHS and many others, evidently follows the technology acceptance model. Adoption of technology will only be efficient if it benefits the health care and eradicates the issues caused by virus attacks (Arizonacollege.edu, 2017).

The technology that the health care system is adopting needs to be user friendly, then only it will be able to increase the performance of the medical physicians, resulting increasing the performance of the healthcares. The technology and innovation has proven to be highly useful and it can be readily accepted in order to remove all the health care issues if they agrees to the two factors as stated in the technology acceptance model. According to Rao *et al.* (2014), the factor of perceived usefulness in this model states that the technology will be useful if it meets all the requirements in the healthcares and at the same time, it helps in the process of overcoming all the health issues that are caused by the virus attacks. According to

Bussenius *et al.* (2013), the change for innovation is only acceptable in healthcares if it does some good to the patients. Hence, in the same way if the introduction of technology and innovation proves to be useful in order to, overcome the health issues then it will be highly accepted in all the health care centres across the globe. The second factor in this model is the perceived ease of use, which focus on the statement that a technology will only be accepted if it is free from effort. According to Nguyen and Gorter (2014), the ease of using any software or gadget makes it more popular and acceptable in a medical centre. Hence, in the same way, if the technology that is introduced is very user friendly, then less training will be required and every physician or nurse will be able to have benefits out of it. It will also make the work of the medical centres easier and this will lead to overcoming of the challenges and in turn will develop the organisation (Catalog.olemiss.edu, 2017).

7.2 Theory of Reasoned Action (TRA)

Theory of Reasoned Action (TRA) is a theory that explains the acceptance of variables in psychological process in making decision about the technology. In other words, it defines the relationship between behaviour, norms, beliefs, attitudes, and intentions from social aspects. As asserted by Lin *et al.* (2014), an individual's acceptance or refuse of technology is determined or presumed by their intention to perform the behaviour; the intention of the individual is predicted by the individual's attitude. However, attitude of a person alone cannot solely determine the behavioral intentions of an individual. In these days, technologies are upgrading more frequently, where profit making organisations tend to face several issues and challenges. However, entire theory has dissed over health care sectors and the behaviour of an individual. Therefore, it is the foremost strategy for most of the 21st-century health care organisation to invest their 40% of the total revenue in research and development of an individual's behavioural intentions. According to Haimes (2015), intentions or behaviour is predicted by subjective norms, which in turn are determined by individual's normal beliefs. In health and social care, there are several innovations and research is going through all over the world. Theory of Reasoned Action focuses on the purpose of the research by considering the priorities. Researchers are more interested to evolve the actions of the research rather than purpose. The main purpose of the model is to make accurate prediction of human choices like consumption of alcoholic beverages and other such consumption that affects human behaviour.

7.3 Theory of Planned Behaviour (TPB)

This another significant theory with deals with the predictive power of the respective theory. During a research, an individual researcher has to face certain challenges regarding the fund allocation and time zone of the entire research. Apart from that, researchers also have to face several problems where they are conducting any kind of primary research. However, in most of the cases, research and innovation have been conducted based on the few general ideas and topics. As per Lin *et al.* (2014), there are five consecutive parts of this theory where the first part discusses the attitude of the researchers or innovators. While at the same time, second part sheds light over the behavioural intention. Subsequent, third part and fourth part reveals subject norms and social norms respectively. Eventually, the fifth and sixth part sheds light over perceive power and perceived behavioural control.

Although there are some limitations, which are stated by many researchers, and critics in present, socio economic aspect. TPB is mainly focused on motivation of the research by considering behavioural aspect. The theory has also examined the literature to identify the attitude, perceived behavioural and subjective norm of the technological use. In addition, it was suggested that influence of the peer and superiors also affect the acceptance. Various psychological variables that are influenced by the acceptance of the theory is independent of theory of acceptance model (TAM) and theory of reasoned action (TRB) frameworks. In this whole process of analysis on system implementation research, a framework was developed suggesting the factors that are relevant to the issue of acceptance such as demographics, user-situations, cognitive lifestyle and personality of an individual. Hence, it was observed that theory of reasoned action considering the technology acceptance model and theory of planned behaviour provides a perception of technology acceptance.

8. Conclusion

It can be analysed that technology plays a very vital role in the eradication of worst-case scenarios. Technology has helped in many fields with respect to the health care issues. It can be observed that various models and theories have been adopted to analyse the impact of technology over the growing virus attacks, leading to critical health issues and disease, leading to the death of the victim. Hence, it can be said that adoption of technology will only be efficient if it benefits the health care and eradicates the issues caused by virus attacks

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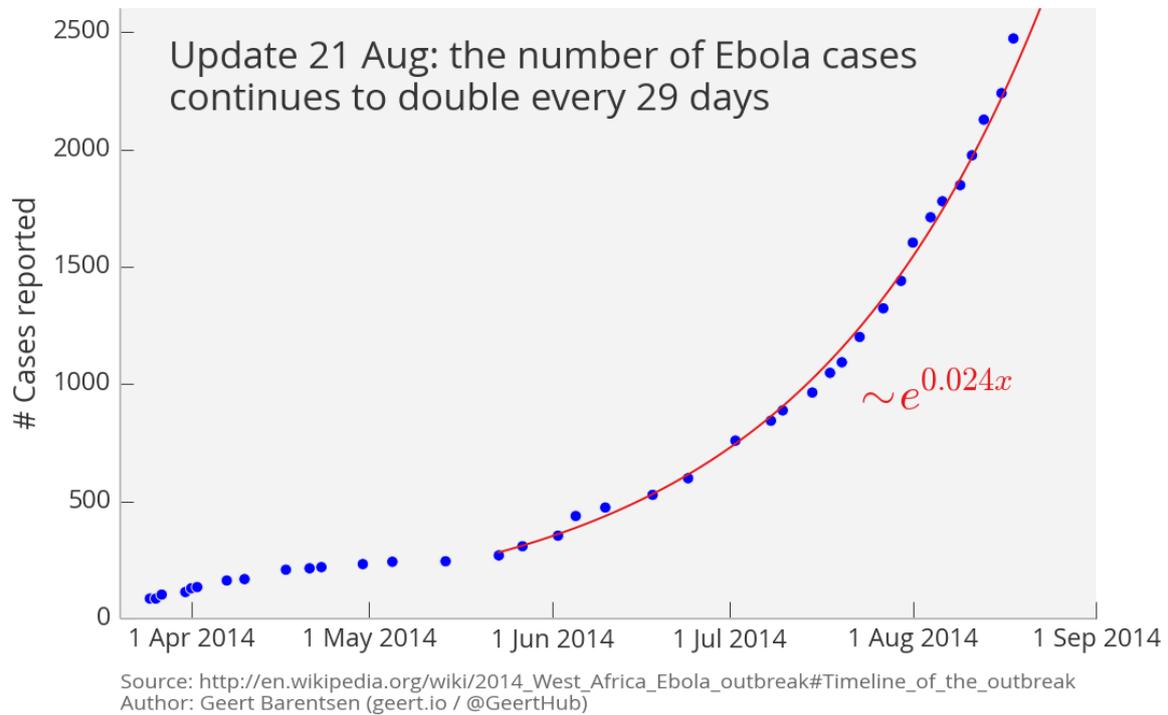


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Appendices:

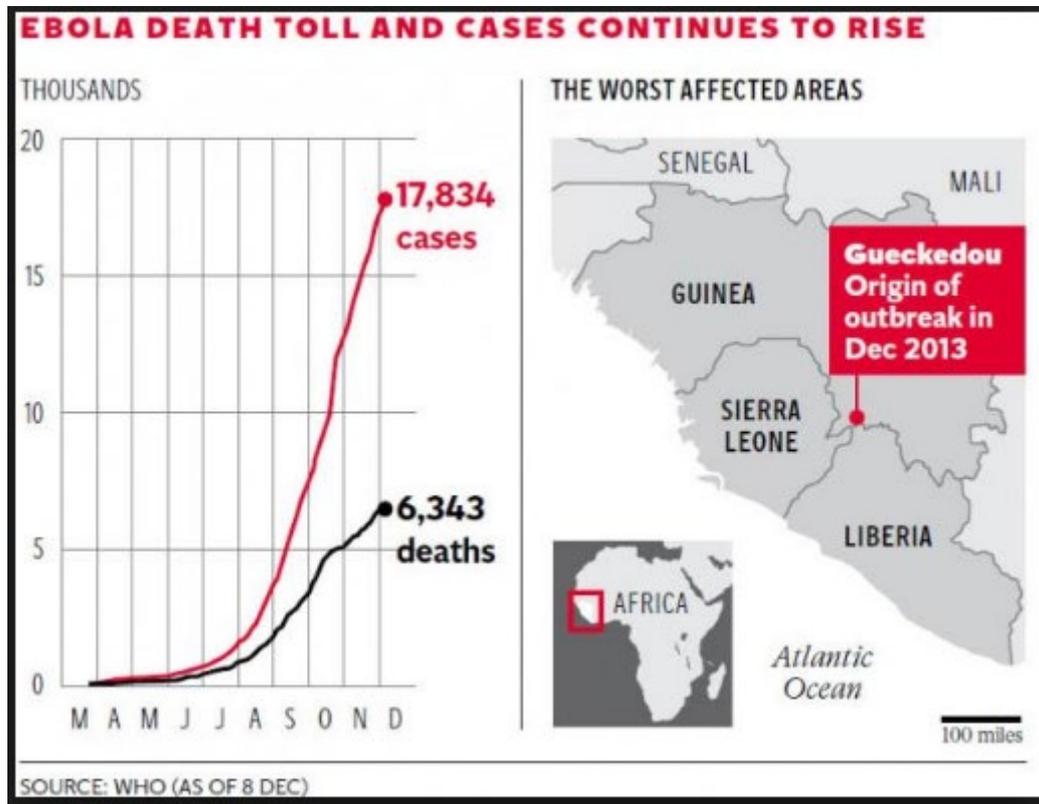
Appendix 1: The number of Ebola cases



(Source:

[https://www.google.co.in/search?q=rise+of+ebola+virus&source=lnms&tbn=isch&sa=X&ved=0ahUKEwiK_8z-y_TVAhXFtI8KHcLHAIYQ_AUICigB&biw=1366&bih=638#imgrc=Dk-Ncj6Luj4GiM:\)](https://www.google.co.in/search?q=rise+of+ebola+virus&source=lnms&tbn=isch&sa=X&ved=0ahUKEwiK_8z-y_TVAhXFtI8KHcLHAIYQ_AUICigB&biw=1366&bih=638#imgrc=Dk-Ncj6Luj4GiM:)

Appendix 2: Ebola virus death cases

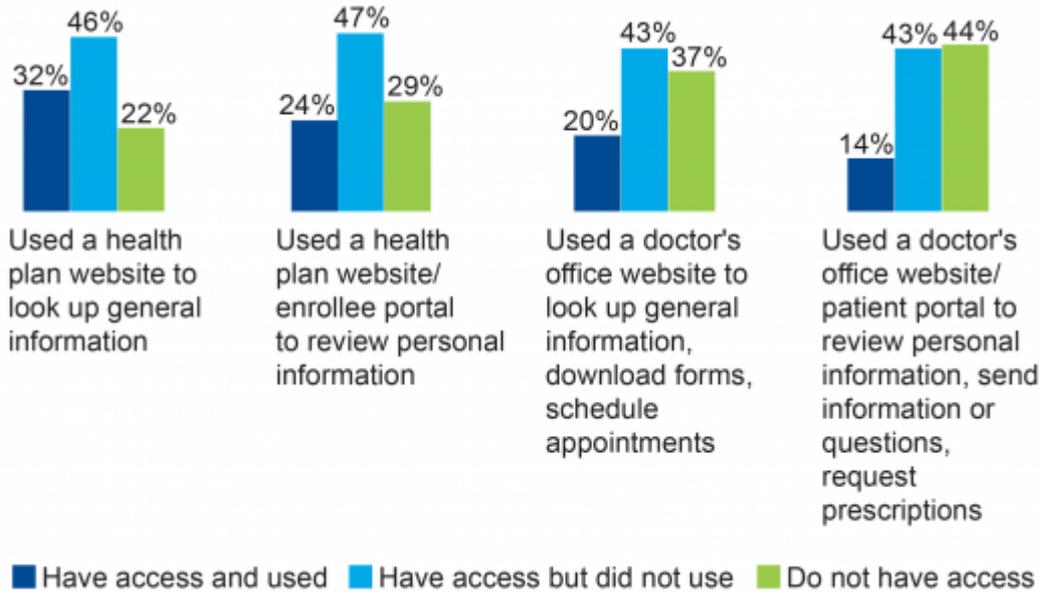


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(Source:

https://www.google.co.in/search?biw=1366&bih=638&tbm=isch&sa=1&q=rise+of+ebola+virus+in+UK&oq=rise+of+ebola+virus+in+UK&gs_l=psy-ab.4...183891.185632.0.186004.6.6.0.0.0.0.176.963.0j6.6.0....0...1.1.64.psy-ab..0.0.0.oqzief-MbI#imgcr=7N2jspkwB3HQLM)

Appendix 3: Role of technology in health care



(Source:

https://www.google.co.in/search?biw=1366&bih=638&tbm=isch&sa=1&q=technology+in+health+care&oq=technology+in+health+care&gs_l=psy-ab.3..0j0i24k112.162069.168162.0.168465.25.25.0.0.0.330.3534.0j10j7j1.18.0....0...1.1.64. psy-ab..7.18.3530...0i67k1j0i10i30k1j0i30k1.pISzDYpUMyQ#imgrc=9TVJsuo503-EwM:)

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Appendix 4: Mobile healthcare technology

+ Mobile Healthcare Technology

By 2016



patients worldwide will use remote health monitoring devices, such as cardiac monitors, that transmit data directly without use of a smartphone or computer hub¹



patients worldwide will use a remote monitoring device that uses a smartphone as a hub to transmit information²



healthcare and medical app downloads (up from 33 million in 2012)²

Sources:

1 Berg Insight, 2012

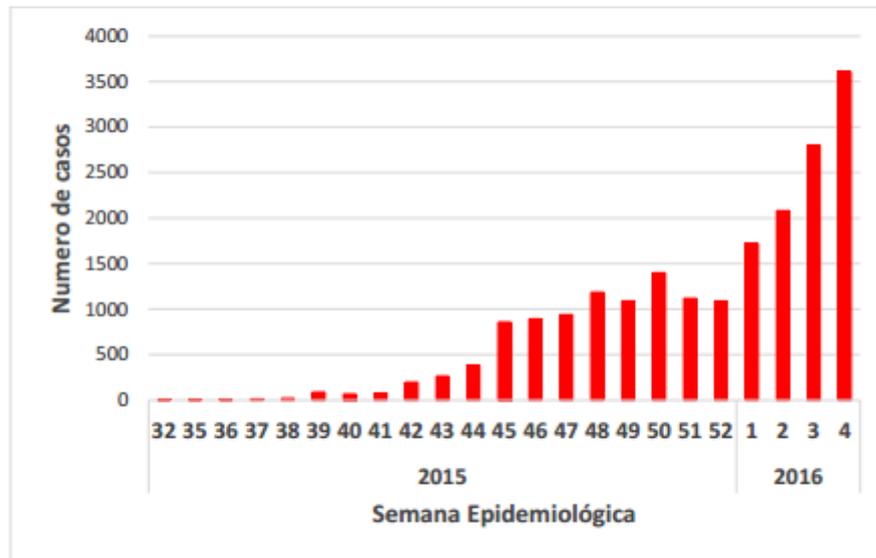
2 Juniper Research, 2012

(Source:

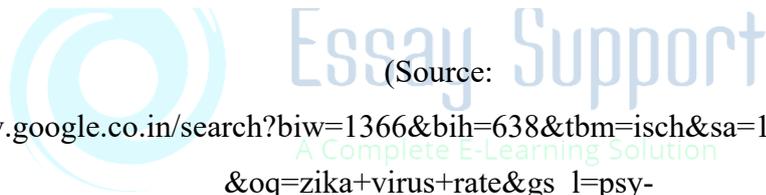
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Appendix 5: Zika virus cases

Gráfico N° 45
Casos notificados de enfermedad por virus Zika, Colombia, semana epidemiológica 04, 2015-2016



Fuente: SiviGila. Laboratorio de Arbovirus, Instituto Nacional de Salud, Colombia, 2015-2016

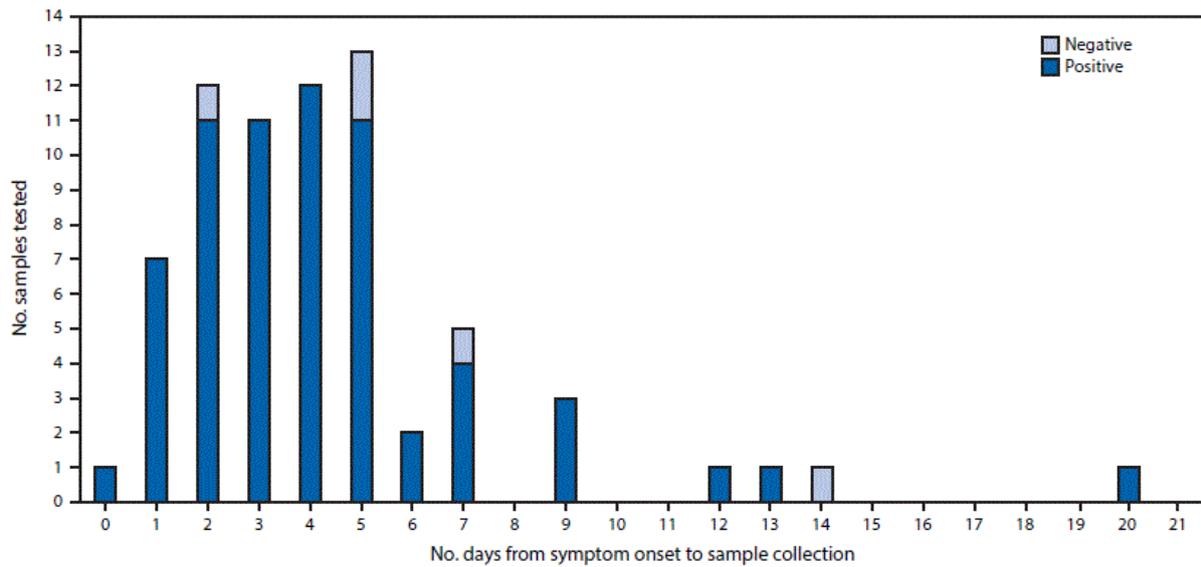


(Source:

https://www.google.co.in/search?biw=1366&bih=638&tbm=isch&sa=1&q=zika+virus+rate&oq=zika+virus+rate&gs_l=psy-

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Appendix 6: Zika virus cases



(Source:

https://www.google.co.in/search?biw=1366&bih=638&tbm=isch&sa=1&q=zika+virus+rate&oq=zika+virus+rate&gs_l=psy-ab..0i8i30k1j0i24k113.152565.159294.0.159512.21.18.2.0.0.0.222.2247.0j12j2.14.0....0...1.1.64.psy-ab..5.14.2033...0j0i67k1j0i8i13i30k1. _mTi8ltCeW0#imgc=JG6yxm4agMB5cM:)

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