

Impact of technology on medical tourism: A conceptual study

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Abstract

Medical tourism is a kind of tourism where people travel from one country to another country in seek of medical treatment at the same time they can visit many places like cultural heritages in the destined country, Technology has made a huge impact in the field of medical tourism through, internet of things, smartphones, social media, telemedicine which have played a greater role in the field of medical tourism at an economic cost which has hugely benefitted the patients and also helps the doctors to diagnose properly. Maintaining the data has become easy through the internet and cloud computing. Technology has its own pros and cons.

Keywords: maintaining, telemedicine, through, technology

Introduction

Medical Tourism is where people who live in one country travel to another country to receive medical, dental and surgical care while at the same time receiving equal to or greater care than they would have in their own country, and are travelling for medical care because of affordability, better access to care or a higher level of quality of care (Medical Tourism Association).

Previously people from developing countries were going to developed countries to seek medical treatment as the

developed countries had advanced technology but now the scenario has changed people are travelling to developing countries like India, Thailand, from developed countries as the technology and infrastructure have been improved in the destination countries.

India is rejuvenating its healthcare sector which has led to various growth factors as we can see numbers of foreign patients are increasing every year because they are able to get the best quality of medical treatment at the economic cost when compared to their own country.

Table 1: Foreign tourist arrivals in India according to purpose, 2017

Country of Nationality	Arrivals in numbers	Business and professional	Leisure and holiday	Medical
Afghanistan	149176	4.24	43.57	37.33
Bangladesh	2156557	4.66	83.70	10.28
Bhutan	25267	0.00	70.42	0.00
Iran	42641	5.86	80.06	0.25
Maldives	66150	5.68	1.43	68.56
Nepal	164018	6.08	73.48	0.28
Pakistan	44266	6.85	26.98	4.03
Srilanka	303590	16.95	68.16	1.46
total	2951665	6.07	78.42	10.79

Source: Ministry of tourism, Government of India reports
Above table shows the number of people arrived in India for various purposes such as business purpose, Holiday purpose

and Medical purpose. We can see that a good number of foreign tourists arriving for medical purpose to India after Holiday purpose.

Table 2: Comparison of Cost analysis of medical procedures in different countries

Medical Procedure	USA	India	Thailand	Malaysia	Singapore
Heart bypass	\$123,000	\$7,900	\$15,000	\$12,100	\$17,200
Angioplasty	\$28,200	\$3000	\$5,200	\$8,000	\$13,400
Heart Valve Replacement	\$170,000	\$12000	\$19,200	\$15,500	\$16,900
Hip replacement	\$40,364	\$10,000	\$18,000	\$10,800	\$13,900
Knee replacement	\$35,000	\$6,600	\$14,000	\$7,900	\$16,000
Spinal Fusion	\$110,000	\$10,300	\$9,500	\$6,000	\$12,800

Source: Ministry of tourism, government of India reports

The above table report shows the prices for various medical procedures in Asian countries and the US. It is clear that India is providing these medical procedures at lesser prices when compared to other countries.

Technology has played a major role in medical tourism as the technology is getting advanced in the medical field foreign patients are getting specialized services. Every company has invested heavily on the research and development as innovation is leading to success and it is very important to stay focused on improving the technology for survival.

When we speak about transportation there was a lot of dependence on public transport such as city buses to commute from one place to another but after private players like Uber and Ola launched their car rental services it has become easy for people to commute at any time even in the midnight to airport a lot of foreigners travel to their countries at midnight as well.

Objectives of the Study

- To review the literature on Medical Tourism
- To understand the conceptual aspects relating to Medical Tourism
- To know the positive and negative aspects of Technology implications on the Medical Tourism

WTO on Medical Tourism

The WTO identified four modes that will help boost trade in health care services worldwide.

1. Medical travel is the most visible face of the increasing global trade in health care services.
2. Cross border delivery of trade.
3. The setting up of hospitals, clinics and diagnostic centres.
4. The movement of health personnel.

Advantages for medical tourists include reduced costs, the availability of latest medical technologies and a growing compliance on international quality

Standards, as well as the fact that foreigners are not likely to face a language barrier in India. The Indian government is taking steps to address infrastructure issues that hinder the country's growth in Medical Tourism. The

Most popular treatments sought in India by medical tourists are alternative

Medicine, bone-marrow transplant, cardiac bypass surgery, eye surgery and orthopedic surgery. India is known in particular for heart surgery, hip resurfacing and other areas of advanced medicine.

Definition of Concepts

Wellness tourism, quite above the concept of spa treatments and sun baths, is aimed at the psychological, spiritual and emotional well-being in addition to the physical well-being. Some of the examples of today's wellness touristic destinations are Chinese medicine, Buddhist meditation, Indian Ayurveda, Thai massage etc.

Medical Tourism Medical tourism –the process of “leaving home” for treatments and care abroad or elsewhere. Although, the term is used largely in the context of cross-border travel, it could also be used to signify domestic travel especially where cities/towns have emerged as health hubs.

Alternate medicine the term 'alternative medicine' is generally used to describe practices used independently or

in place of conventional medicine.

Ayurveda is the ancient traditional method of treatment involving combinations of herbal medicines, physical massages and various other forms of therapy.

Naturopathy Use of different therapies that are mainly natural and nontoxic, with no side effects, which includes nutrition, botanical medicine, hydrotherapy, physical medicine, and counseling.

Review of Literature Hema Agnihotri (2016) [2] Discusses about the technology and innovation in medical tourism. Approximately, 75 percent of healthcare services and investments in India are now funded by the private sector. She has explained the various technologies which are advantageous in the field of medical tourism like cloud computing, Information technology. The important factors that influence the medical tourists to choose India as destination are cost factor, experienced doctors who can speak English fluently and has the best tourism destinations. Suman Bhushan Bhattacharya Discussed the role of tele medicine and medical tourism. He says that telemedicine is a solution to the problem of access to healthcare irrespective of the geographical location of the various stakeholders of the clinical care process. The author says that telemedicine plays an important role in medical tourism. When the medical traveler returns to his own country and needs follow up consultation then telemedicine comes to place for the medical travellers help. So the telemedicine needs to be an integral part of medical tourism.

Kshipra Jain outlines the significance of the role of technology in the healthcare sector. The author feels that developed and developing countries are in need of each other. The technological advancement in the field of medical science disease diagnosed at one particular place can be treated by the experts from a different location. In India, medical tourism is booming as the medical tourists are getting the treatment at a lower cost compared to developed countries. With changing environment new challenges are arising like bacteria, infections, Etc and says that research and development are very important for this generation.

Eugene Chng remarks that technology is playing a major role in increasing medical tourism. He has analyzed the factors which medical tourists look for they are healthcare infrastructure, quality of the medical professionals. He says that technology has provided solutions for medical professionals to handle the information easily and the data can be accessed timely. Technology has become critical to make sure that information is protected as well. The author says that Asia has become one of the leading regions in the world for medical tourism as travelers can seek alternative therapies like yoga, meditation along with holidaying.

Yousra Hallem and Isabelle Barth (2015) [5] authors have explained the role of the internet in medical tourism. The authors say that medical tourism has become attractive since the treatment can be available at affordable prices in many countries. Remarked the importance of technology in the field of medical tourism. According to them the Internet is playing a major role in medical tourism and internet functions should help professionals in the healthcare sector and attract more medical tourists. Through Internet relationship between medical tourist and service provider can be improved.

Samlee Plianbangchang (2017) highlights the importance of the globalization of healthcare, from the rise of medical

tourism there has been a huge investment in medical equipment and health services to enhance the health industry. The author says that medical tourists travel for few reasons such as economic factor and unavailability of services such as certain procedures of cosmetic surgery and for alternative medicine and to receive the advanced treatment which may not be available in their own country. He emphasizes on communication technology is the main factor for the globalization of the healthcare sector.

Research Gap

- Many studies have been conducted internationally which have focused on Medical Tourism. However, the number of studies published on Technological perspective is small.
- Even though Medical Tourism ventured decades ago, still it is not got its dues. The present study explores as to what are the ways in which the Technology could do its part in elevating the Medical Tourism

Innovative Applications of Technology in Medical Tourism Industry

Here we can see few ways in which technology is currently being used by the medical tourism industry.

Cloud computing is a great platform for the doctors as the data can be viewed on a real-time basis (Hema Agnihotri, 2016) ^[2]. Doctors can get a clear picture of the patient by accessing the data of the patient by checking the medical records and can diagnose effectively. Data can be accessed from any part of the world through this technology. So it is better to adapt to this technology instead of using the papers and files.

Tele medicine is playing a vital role in medical tourism as it is very essential for the doctors to know about the patient's health condition pre-arrival from the patient's home country and it will be very much helpful for post-treatment as well. Telemedicine is a boon for patients who can't travel often to the hospital as they can obtain treatment from their own place with saving the time to travel. Patients can communicate to doctors via video conferencing in case of emergency for the first aid when they are located in a remote area.

Social Networks Social media has made a greater impact on people with the new technologies arriving. Facebook has become a great platform for interacting with people from different geographic locations. Most of the businesses are using Facebook as one the tool to promote their brand and sales. Through Facebook, patients are able to contact doctors and interact with them about the problems they have. People can meet the travel agents who can arrange for the travel and stay in the destination country for their medical treatment or specialized services which they require. DD They can check the ratings of the hospitals instantly through Google or Facebook. Many hospitals are using Twitter, YouTube, and Instagram as their promotional tools for advertising. Through these platforms, it has become easy for medical tourists to choose their destination country for their medical treatment and for vacationing as well.

Smart phones In India mobile phone users were very less and were using monochromic phones but nowadays mobile phone usage has multiplied and entered every nook and corner of the country that has also given access for smartphones in rural areas which is an add on features

which with adding up of the new features in the mobile phone that will facilitate choosing the specialist doctor medical apps can be like anybody can use a Smartphone for checking their own medical reports through hospital and they can choose the specialist doctor and can take appointment as well from the phone itself. When we refer to foreign medical tourists they can see the standards, accreditations, and infrastructure of the hospitals and they can book their flight tickets from their phones, they can get the specialized services which they require. Many Pharmaceutical companies have introduced apps for ordering medicine online and they are successful in that.

Internet of things Internet of things is an advanced technology where it can connect the internet into physical devices (Wiki). This technology can help to easily maintain the data and can be very important to reduce the errors. This device can be a handful for a physician to diagnose the patient through the data collected like Blood pressure, sugar levels ECG, This technology saves a lot of time as data can be viewed from any location on the real-time by the doctors, patients and the service providers.

Data mining Data can be huge and in an unstructured way, through data mining data can be analyzed easily and can obtain the required information for further use (Wiki). Data mining can be used very much effective in the medical tourism industry. A large database can be created to check the different case files and different kinds of diseases and the solutions to handle those problems effectively. Foreign medical tourists can check the facilities provided by the hospitals and can get the best treatment with a minimal cost at any country in the world.

Negative Side of the Technology Data at risk the healthcare sector is growing tremendously along with the technology, Medical records are valuable for all the patients even though hospitals maintain medical records properly there are chances of the data breach by the personnel and they can make use of patient's data and commit fraud.

Cyber-attacks Healthcare organizations are investing hugely in technology and research and development as it can save time and money. As the technology is growing the risk is also increasing for the security of health data According to the Identity Theft Resource Center (ITRC), data breaches in the healthcare industry accounted for 22.6 percent of the total reported cases in 2017 (Medical tourism magazine). As the health data is more valuable cybercriminals may try to hack into the system and get the information and may misuse the data for false claims and other kinds of fraud.

Conclusion

Medical tourism has gained huge importance over the years in India. The improvement in technology has led foreign patients to check the hospitals easily through the internet and they can comfortably book flight tickets to the destination country. Many medical tourism consultancies have increased to help foreign tourists for their medical treatment. Technology has benefitted medical tourism in many ways, with growing technology storing the health data of patients has become easy through cloud-based infrastructure. It has become easy to view the data from any location. Through the internet and smart phones, patients can contact doctors and take an appointment. Data mining is also a great technology where can obtain data patterns for each patient and can diagnose properly. But as health data is shared through emails and other ways cybercriminals try to

hack the health data can misuse of that data. There are ways to control the cyber-attacks through cyber insurance and with strong cyber security which can protect the data. So technology is very important for medical tourism to grow tremendously and technology has a greater impact on medical tourism through innovation, research and development.

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