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Dentistry Section

# Global Tourist Guide to Oral Care -A Systematic Review

KULDEEP DHAMA¹, BASAVARAJ PATTHI², ASHISH SINGLA³, RITU GUPTA⁴, LAV KUMAR NIRAJ⁵, IRFAN ALI®, JISHNU KRISHNA KUMAR¹, MONIKA PRASAD®

#### **ABSTRACT**

Introduction: Dental tourism means travelling abroad for economical dental treatment as the cost of treatment is high in one's own country. This trend has been emerged due to high priced health care and long waiting lists in many Western countries. In spite of large debates on dental care, tourism has taken place; still there is lack of scientific studies related to the dental tourism.

**Aim:** The present review aims to analyze the opportunities, feasibilities, treatment cost variability and popularity of dental tourism.

Materials and Methods: The search strategy used a combination of controlled vocabulary and free text terms. The main database was PubMed, PubMed Central, Cochrane Review,

Embase and Google Scholar from 2000 – 2015. Out of the total 69 titles appeared seven articles fulfilled the criteria and were selected for the review. One article which was hand searched and one article through email were also included.

**Results:** This review focused the strengths of India's dental tourism service as there is a lot of cost difference with good quality work when we compared India to the other countries. Like cost for smile designing in US is 8,000\$ and in India is 1,000\$ and for dental implants in the US is 2,000\$, in Hungary is 1070\$ and in India 600\$ approximately.

**Conclusion:** Government and industrial infrastructure favours the growth of dental tourism in India. The opportunities like less price with good quality care in India helps to make further progress in dental tourism.

Keywords: Dental care, India, Implants, Medical tourism, Treatment

#### INTRODUCTION

Access to oral health care refers to patient's ability to obtain or make use of oral health care. Oral care is different from other health care services not only in the term of care but also the ways in which dental care is organized [1]. Mostly dental diseases do not require emergency treatment and untreated dental illnesses doesn't lead to considerable health consequences.

Most of the people consume preventive services on a regular basis, but some of them seek dental care outside their local healthcare systems and may be accompanied by a vacation. So, this search for treatment options can lead to birth of dental tourism, where medical care tourism is prominent [2,3].

This enables the dental care providers in developing countries to cater oral care at significant cost savings. Recently a new and emerging trend has come into existence where patients mainly from Europe, North America and Australia, travel abroad for dental treatment as it is expensive in one's own country [4].

**Pull Factors for Dental Tourism:** In the recent years dental tourism has become popular particularly among the Europeans and Americans and the most important pulling factor is the savings associated with the lower cost for dental services like root canals, veneers, fillings, crowns, dental bridges, dental implants, orthodontic care etc., in the destination countries [5].

The other factors that have contributed to dental tourism are the reduced waiting time for the patients seeking cosmetic dental treatments than waiting under the National Health Service (NHS) for cosmetic treatment in United Kingdom. These patients choose a trip abroad for a quick-fix smile [5].

Even the lucrative marketing strategies like tourism trip during the duration of stay, best accommodation services, flights and pick up-drop services have been frequently used by the destination countries to lure the patients [6].

The cornerstone of bioethics is the autonomy of the patient that means informed consent which is the main concern for dental

tourists. But informed consent is disrupted due to limited or incomplete information on websites regarding success rates and the quality and standard of care in destination facilities [7]. Even the effective legal solutions to these problems are difficult to establish because of multiple jurisdictions and lack of clarity in terms of jurisdiction [8].

Dental tourism is a fascinating term, but still it faces many exuberating factors that cause barriers in the utilization of services by dental tourist, as most of the patients are not aware of the standards and risks associated with dental care because of the lower cost. The low quality of dental service offered by the dental professionals in some of the countries has been the most important negating factor for dental tourism. Patients with limited finance primarily focus on price comparisons rather that the quality of treatment [9]. Lack of appropriate training and standard of infection control are other barriers for dental tourism [7,10].

The international passenger survey conducted by the Ministry of Tourism in 2003 concluded that 10% of about 2 million passengers were Non-Resident Indians (NRIs) who visited India for various medical treatments [11].

According to a report the medical tourists (million) in 2010, 2011, 2012, 2013, 2014 and 2015 were 0.75, 0.98, 1.27, 1.65, 2.14 and 2.78 respectively. Also the revenue (US million \$) generated from medical tourism in 2010, 2011, 2012, 2013, 2014 and 2015 was 1067.5, 1387.8, 1804.1, 2345.3, 3048.9 and 3963.6 respectively.

**Opportunities:** There are various advantages in the field of medicine in India like cost effective treatment along with high international standards and well equipped hospitals. In case of communication also, most Indian doctors and other medical staff are fluent in English which is a connecting language globally [11]. Moreover, India has various exotic tourist spots which can promote the country in the field of tourist destinations and business. So, Indian government has to use these opportunities to make dental tourism more attractive.

Even the Indian natural healing and medicinal system can also make many foreign patients to choose India for their treatments. In countries like US, health insurance covers only critical care and not the cosmetic and beauty treatments. So, for these treatments also tourists can choose India as a low cost destination [12].

Need for the Present Review: The optimistic view of phenomenon of dental tourism is that the patients are taking inexpensive "dental vacations" in exotic locales. But patients are at risk of receiving inferior care with lower regulatory standards and limited oversight of dental clinics, which is of sceptical view. Therefore, this area of subjects needs critical analysis and review to assess the clinical, economic and social consequences of cross-border dental care, as India is the only probable country that offers various categories of tourism like history tourism, adventure tourism, medical tourism along with dental tourism, spiritual tourism, etc. This review aims to assess the implications and feasibility of dental tourism in India. Thus, the present review aims to analyze the opportunities, feasibilities, treatment cost variability and popularity of dental tourism.

## **MATERIALS AND METHODS**

**Eligibility Criteria:** The articles which were published in English, dated from the year 2000 to 2015 were included in this review. The search terms for articles were medical tourism; dental and tourism either in the title or abstract. Full text original research articles were considered. Unpublished articles in press and personal communications were excluded.

Inclusion Criteria: Original research articles.

**Exclusion Criteria:** Review articles, case series, case reports and letters to the editor and articles for which only abstract was readable.

**Search Method for Identification of Studies:** For the identification of the studies included in this review, we devised the search strategy for each database. The search strategy used a combination of controlled vocabulary and free text terms. The main database was PubMed, PubMed Central, Cochrane Review, Embase and Google Scholar.

#### **Electronic Searches:**

- 1. Pub Med (2000-2015)
- 2. Pub Med Central (2000-2015)
- 3. Cochrane Review (2000-2015)
- 4. Embase (2000-2015)
- 5. Google Scholar (2000-2015).

**Other Sources:** The search also included the hand search of the journals fulfilling the inclusion criterion for the review.

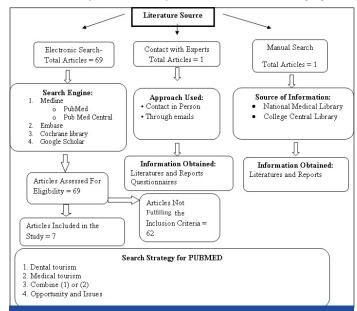
Search Criteria: Published literature on recent developments in research on dental tourism in PubMed Central Databases was taken into study for the review. A literature review was performed using MeSH terms, medical and dental tourism. A combined total of 69 abstracts appeared. Out of these seven titles/abstracts were related to the research question which fulfilled the inclusion and exclusion criteria. One article was hand searched and one article through contact with expert was included in the review. Thus, a total of nine full text articles were retrieved for the review. Reported data were analyzed and represented in the form of figures and tables for the current review [Table/Fig-1].

## **RESULTS**

The results of the studies were summarised as shown in [Table/Fig-2] [2,13-20].

Patient satisfaction, less time and lower cost are the prominent concern in dental tourism in recent years. Many internet sites give the information about treatment in other countries. Thus, present systematic review analyzes the opportunities, treatment cost variability and popularity of dental tourism.

**Cost Effectiveness:** It has been established that the dental treatment in India is economical and the waiting time is also almost nil as there are immeasurable number of dental practitioners in the private sector which comprises of hospitals and clinics in India as found in a study conducted by Naik NTK et al., in 2013 [18]. Also



[Table/Fig-1]: Search strategy for the available literature through electronic database, manual records and personal contact.

when compared to UK and US, countries like Mexico, Poland, Hungary and Thailand provided quality dental care at a reduced average cost [13]. Similarly, in a study conducted by Stanciu AC et al., in 2014 [13] and Elena et al., in 2013 [14] it was found that excellent service were offered by Romania with dental cost being reduced by 50% for similar care when compared to Western Europe.

It was found that people travel for dental treatment to the other country due to the difference in cost of treatment, the difference between the funding of public healthcare or general access to healthcare, lack of dental facilities in their country and the high cost of dental treatment in their respective countries and it was seen India provided low cost treatment as compared to US and Europe as seen in study conducted by Ghatala MH et al., in 2014 [20] and Piazolo M et al., in 2011[16].

**Less waiting time:** It was found that patients overall treatment abroad was carried out in a short time and most patients were satisfied with dental tourism as found in study conducted by Carmagnola D et al., in 2012 [17]. Patients appreciated different aspects of the foreign dentists like speed, kindness, humanity, interest in the course of the treatment, the feeling of ease conveyed by the environment and the personnel and lack of trust in Italian dentists [18].

It was also seen that India is not only cheaper but the waiting time is also almost nil [19]. According to study conducted by Elena et al., in 2013 [14], Romania was found to have shorter dental treatment periods.

**Best Quality Dental Services:** A study conducted in Romania by Elena et al., in 2013 [14], found Romania to be a popular destination providing affordable quality dental treatment along with high end technology and material. Also it was found that the dental profession quality is high in Hungary and the quality of dental technology, the quality of materials and equipment used in dental practices in Hungary are equal to European quality [19].

#### DISCUSSION

Dental tourism is growing very rapidly in developing countries. Many developing countries provide affordable quality dental treatment in very short time to attract more patients. The UK patient gets such

treatment in Bulgaria, Hungary, Romania and Poland. At the same time, most of American patients obtain such low cost dental care in Argentina, Costa Rica and Peru (Turner, 2008) [14]. The most

popular destinations providing affordable dental treatments are: India, Costa Rica, Mexico, Thailand, Philippines, Hungary, Turkey, Czech Republic and Poland. Zoltan J et al., [15], Osterle A et al.,

STUDY	TITLE	OBJECTIVE	PRICE	RESULTS
Österle A et al., in 2009 [2]	Travelling for teeth: characteristics and perspectives of dental care tourism in Hungary.	To measure the phenomenon in Hungary, with a particular focus on the Western Hungarian region and the capital, Budapest.	The most common reasons for patient to travel according to dentist in Western Hungary and Budapest are: Fillings in Budapest is 71.2% and in Western border is 39.7%. Dental Implants in Budapest is 33.7% and in Western border is 44.4% and Partial denture procedures in Budapest is18.3% and in Western border is 58.7% for foreign patients.	According to the survey, patients from neighboring countries dominate dental care tourism in the border regions of Western Hungary, while Budapest attracts more patients from countries further away. In terms of motivation, dentists regard relative price levels but also service considerations as being of major importance for patients coming to Hungary for dental care.
Stanciu AC et al., in 2014 [13]	Aspects regarding the development of the dental tourism in Romania	Highlight the extent of dental tourism worldwide and to identify opportunities for developing the dental tourism market in Romania.	Romania provided excellent services, 50% lower than in Western Europe.	The increasing popularity of dental travel includes price, time, travel and availability and improvements in both technology and standards of care in many countries.
Elena et al., in 2013 [14]	Considerations about dental tourism development and its specific marketing in Romania	Difference in the cost of treatment.	Prices (euro) of major dental service for Dental procedure in Italy, Germany, Hungary and Romania. For Temporary filling 37 in Italy, free in Hungary and 3 to 5 in Romania. For Filling 100-150 in Germany, 60-80 in Hungary and 15-22 in Romania. For Extraction 300 in Germany, 70 in Hungary and 6-15 in Romania. For Dental implant 1,200-3,000 in Germany, 1,000 in Hungary and 400 in Romania. For Crown 1,000-1,800 in Italy, 255 in Hungary and 110-140 in Romania. For Complete prosthesis 2,000 in Italy, 560 in Hungary and 135 in Romania.	Romania can become one of the most affordable dental tourism countries because of affordable prices for quality dental services, dental treatment periods are relatively short, dental offices are equipped with top device of medical technology, specialized staff is highly trained.
Zoltan J et al., in 2010 [15]	What is Tourism in Dental Tourism?	Price competitiveness of treatments.	Prices of major dental services Rates (euro) in Hungary, Poland, Mexico, Thailand, UK and USA. For Crown, in Hungary 270, in Poland 225, in Mexico 140, in Thailand 285, in UK 600 and in USA 1000. For Bridges in Hungary 270, in Poland 225, in Mexico 350, in Thailand 285, in UK 600 and in USA 1450. For Implants in Hungary 1070, in Poland 975, in Mexico 1000, in Thailand 1350 in UK 2700 and in USA 2000. For Veneers in Hungary 400, in Poland 325, in Mexico 300, in Thailand 225 in UK 750 and in USA 1100. For Filling in Hungary 45, in Poland 34, in Mexico 35, in Thailand 22, in UK 75 and in USA 75. For Root canal in Hungary 100, in Poland 80, in Mexico 110, in Thailand 90, in UK 450 and in USA 375.	Health tourism has been and can be the product, which makes Hungary a favourite destination for the European visitors. Dental tourism in Hungary is still in the growth phase of its lifecycle. It has still few years of significant presence on the market, before the overhead costs will increase and the price of the whole trip will be equal with a treatment in the Western countries.
Piazolo M et al., in 2011 [16]	Medical Tourism - A Case Study for the USA and India, Germany and Hungary.	To demonstrate a simple Ricardian model of international trade for health care industries of different countries.	The unit costs and output for dental services in India and USA. Cost for Dental Implants in India is 1,780\$ and output is 20 units and in USA is 2,780\$ and output is 24 units. For Dental Crowns in India is 400\$ and output is 18 units and cost in USA for crown is 1,000\$ and output is 80 units. The unit costs and output in Germany and Hungary. Cost for Dental Implants in Germany is 1,600€ and output is 20 units and in Hungary cost for dental implant is 820€ and output is 24 units. Cost for Dental Crowns in Germany is 1,800€ and output is 18 units and cost in Hungary is 250€ and output is 80 units.	Cost differentials for dental implants as well as for dental crowns are less than the cost of travel, international tourism between the North-American and Asian nation is economically not worthwhile anymore.
Carmagnola D et al., in 2012 [17]	A survey on the experience with dental tourism in a sample of Italian patients.	To carry out a survey aimed at investigating the perception of dental tourism by Italian patients who have recently received such dental care abroad.	The main motivation for turning to dental tourism was saving money and another frequent reason was that full rehabilitation was offered in a short time span, usually one week.	Patients have often underlined that they appreciated different aspects of the foreign dentists, like speed, kindness, humanity, interest in the course of the treatment, the feeling of ease conveyed by the environment and the personnel. Most patients were satisfied with dental tourism.
Naik NTK et al., in 2013 [18]	Economic analysis of Indian medical tourism	Tourism provides employment opportunities, growth of GDP, promotion of healthcare and earning foreign exchange.	The cost of dental treatment in India and USA.  For Smile designing in US is 8,000\$ and in India is 1,000\$.  For Dental implants in US is 2,000\$ and in India 600\$. For Porcelain mental crown/bridge in US is 600\$ and in India is 70\$. For Root canal treatment in US is 500\$ and in India is 50\$. For tooth colored composite fillings in US is 150\$ and in India is 15\$.	India is not only cheaper but the waiting time is also almost nil. This is due to the outburst of the private sector, which comprises hospitals and clinics with the latest technology and best practitioners.
Kovacs E et al., in 2013 [19]	Vacation for your teeth' - dental tourists in Hungary from the perspective of Hungarian dentists.	To provide comprehensive empirical evidence from the perspective of a recipient country in dental tourism.	Cost of complications in dental care is around 5%, similar to other European countries.	The cost/benefit ratio is outstanding and the dental profession quality is high. In Hungary dental technology, the quality of materials and equipment used in dental practices is of European level quality.
Ghatala MH et al., in 2014 [20]	A Case for Medical Tourism in India.	Difference in cost of treatment.	The cost for dental treatment in US, Europe and India. For dental filling in US and Europe is 300\$ to 400\$. It costs only 20\$ to 40\$ in major cities in India. For root canal is 1,300\$ in the West but only 200\$ to 250\$ in India. For Dentures can cost a minimum of 1,000\$ in the West and only 300\$ in India. For Implants cost is 3,000\$ to 5,000\$ in US and Europe but only 1,100\$ in India along with ceramic prosthesis.	High cost of dental treatment in their respective countries.

[2]. Kovacs E et al., [19] conducted similar study and found that Hungary is leading in case of dental tourism due to outstanding cost and benefit ratio, dental professionals are well-trained, dental technology, quality of materials and equipment used in dental practices is of European level and patient satisfaction levels are high. Romania was found to provide best dental service at a lower cost and over a relatively shorter period of time [11,14]. Ghatala MH et al., [20] and Naik NTK et al., [18] found that the dental treatment cost in India is very low as compared to US and Europe. India provides state of the art treatment in a cost effective manner and there is no waiting period for any treatment. Similarly, a study conducted by Piazolo M et al., [16] found India has less treatment cost and more output as compared to the US and Hungary has also less treatment cost and more output and on other hand Germany and US have high treatment cost and less output. Carmagnola D et al., [17] conducted a study and found that patients appreciated different aspects of the foreign dentists like speed, kindness, humanity, interest in the course of the treatment, the feeling of ease conveyed by the environment and the personnel. Thus, provision of improved dental health infrastructure, cost-effective treatment, less waiting time and access to quality dental care can increase the number of patients travelling to India from abroad for

Destination for the Dental Tourism: Mexico followed by India and Hungary is the leading destination for dental tourism, 25% of the worldwide dental tourists come to Mexico. Hungary primarily serves the Europeans, while India attends mostly Asian patients, along with some US citizens [15]. Even Thailand is growing as a dental tourism destination because of affordable prices for quality dental services [13,14].

Challenges and Issues: The standard of infection control in the destination countries is an issue for the dental tourist [7]. In the United States (US), optimal infection control and protection for patients is the main priority for the dentists. But in third world countries the protections like Occupational Safety and Health Administration (OSHA) regulations are not important and the patient receiving care do not have any assurance of patient safety or proper infection control [6].

Another consideration is the lack of appropriate training. In the United States and Europe most of the dental schools provide highly skilled and technically advanced training [10]. But in Eastern Countries the standards and quality of dental training is not consistent and there is no uniform standard [6].

Dental tourism in India is still in the growth phase because of several issues and challenges. There is limited or less promotion due to lack of governmental participation. The lack of proper investment in dental health infrastructure along with less focus on dental health insurance policy is the primary obstacle in this field. Other factors like lack of uniform pricing across all the hospitals in India and inequalities in private-public partnership are also challenges for dental tourism. Because of this, many other countries like Thailand providing good quality dental care are emerging as strong competitors of India.

## RECOMMENDATION

Dental tourism has to be promoted as part of medical tourism specifically by the Government of India at international platforms and make an attractive policy for dental treatment in India. Indian hospitals should tie-up with foreign insurance companies for an assured supply of dental care. The insolvency of the government in getting a medical visa should be reduced.

## CONCLUSION

With the emergence of various tourisms, dental tourism is the one which has identified the dental needs of many tourists worldwide. Initially it was not organized like business and it just started as a personal experience but now-a-days it has gained popularity. Through this review the map of current knowledge on dental tourism has been shared which shows that there is still need for improvement in this field as there is negligible information on the background of patients and the numbers of patients travelling abroad for treatment. Many of the studies reviewed that this initiation is complex. So, further qualitative and quantitative researches are indicated.

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#### PARTICULARS OF CONTRIBUTORS:

- Tutor, Department of Public Health Dentistry, D.J. College of Dental Sciences and Research, Modinagar, Uttar Pradesh, India.
- Professor and Head of Department, Department of Public Health Dentistry, D.J. College of Dental Sciences and Research, Modinagar, Uttar Pradesh, India.
- Reader, Department of Public Health Dentistry, D.J. College of Dental Sciences and Research, Modinagar, Uttar Pradesh, India. Senior Lecturer, Department of Public Health Dentistry, D.J. College of Dental Sciences and Research, Modinagar, Uttar Pradesh, India.
- Tutor, Department of Public Health Dentistry, D.J. College of Dental Sciences and Research, Modinagar, Uttar Pradesh, India. Tutor, Department of Public Health Dentistry, D.J. College of Dental Sciences and Research, Modinagar, Uttar Pradesh, India.
- Tutor, Department of Public Health Dentistry, D.J. College of Dental Sciences and Research, Modinagar, Uttar Pradesh, India.
- Tutor, Department of Public Health Dentistry, D.J. College of Dental Sciences and Research, Modinagar, Uttar Pradesh, India.

# NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Kuldeep Dhama,

Tutor, Department of Public Health Dentistry, D.J. College of Dental Sciences and Research, Ajit Mahal, Niwari Road, Modinagar, Ghaziabad-201204, Uttar Pradesh, India. E-mail: dhama.viccky50@gmail.com

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