

## Medical tourism services quality analysis: a systematic review

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### Abstract

**Introduction:** Medical Tourism is defined as providing cost-effective medical care with the assistance of the tourism industry for patients requiring surgery and other special treatment. This study was performed to systematically collect literature in the field of medical tourism and analyze the service quality of this industry for future applied research.

**Materials and Methods:** A systematic literature search was carried out based on four electronic databases including PubMed, Science Direct, Scopus, and ISI articles published until June 2015. Also, the references of the final selected articles were reviewed to identify the relevant articles. The searching strategies included the following combination of keywords: "medical tourism", and "service quality". Among 128 articles that were identified in the first search, 16 articles were included in the final review. One article from the selected articles was extracted and content analyses was performed in order to determine the type of intervention.

**Results:** Nine out of 17 articles which totally related to the research questions belonged to Scopus database. Fourteen articles were descriptive. Most of the articles were conducted in Asia (13 articles). Questionnaire method was used in eight of these papers. Ten studies were conducted in hospitals. The main topics of the studies included Servqual, the necessary changes, patient satisfaction, motivations, patients' expectations, patients' perceptions, patients' concerns, and service quality factors.

**Conclusion:** Health care organizations are looking for various ways to assess the provided service quality and its improvement. Observing a variety of the dimensions of medical tourism service quality in order to attract more patients to the country, is a requirement to policy a country's health care system.

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### Introduction

Tourism is a pioneer and diverse industry in the world (1). It is considered as one of the main sources of countries' income. According to experts' predictions, tourism will become the most profitable industry in the world by 2020. International growth, global competition and interests in tourism destinations have emerged the need of various types of tourism (2-4). Today, many countries with regards to the human beings need for health, have developed medical industry as a source of massive income in relation to tourism (5, 6). Increasing 20% in admission of foreign patients in American hospitals confirms this matter (7). Medical tourism is a new type of tourism and an international and political-economic phenomenon, which is growing fast in the world, especially in Asian countries (8).

Medical tourism is defined as the provision of the cost-effective medical care, collaboration with tourism industry, for patients needing surgical and other treatments (9). Asian countries including India, Thailand and Singapore are the main destinations of medical tourism (10, 11). The main reasons for choosing these countries as a medical tourism destination by tourists are low cost, high quality of medical services, approved hospitals by the Joint Committee on Accreditation, better infrastructure, experienced doctors and fast access to services (2, 11). In 2005, more than 55,000 Americans were referred to the

Bumrungrad hospital in Thailand to receive medical care (5). Patients without insurance, depending on the destination country and the type of treatment, may save about 15 to 85 % of health care costs (6).

According to Iran's dependence on revenues of oil export and problems related to it, investment in the new products and industries are needed (12). The medical tourism industry in Iran has unique features, including high quality of medical services, low cost of medication and treatment, access to advanced equipment and services, and skilled doctors. Lack of health tourism information systems, the existent of problems in the level of policymakers and managers, the brokerage between patients and hospital, lack of follow up systems, lack of insurance laws in accordance with international standards, constantly changing technologies, and inefficient rules in medical crimes are problems in the Iran's medical tourism industry (6, 13).

Results of a systematic review by Ferdosi et al. showed that increasing the waiting list in developed countries, increasing international exchange rates, increasing access to the internet, lower cost of services in developing countries and, access to modern technology and equipment were considered as medical tourists' motivators to choose a country as a medical tourism destination. In medical tourism marketing, strategies in different countries were considered Ps7 (Product, Price, Process, People, Promotion, Place and Physical evidence) (14). In a study



conducted by Carruth et al. (2010), Americans' main reasons to travel abroad to receive medical services were expressed as the high cost of health care in USA, providing appropriate care packages, health insurance participation in patients' transmission to medical tourism destinations, and suitable quality and safety of medical tourism centers outside USA (15).

By identifying the capabilities and strengths and weaknesses of a country's tourism industry, important factors in attracting foreign patients could be discovered, and considering the threats and opportunities, it could be promoted and success could be achieved in this industry. The development of this industry will improve the quality of health care services and generate employment in the health sector and lead to global standards. Finally, medical tourism will generate income and will eventually lead to economic, social, cultural and political development for the country. Thereby, the purpose of this literature review was to collect papers to analyze the quality of service in the field of medical tourism industry.

### Materials and Methods

This systematic review was conducted during April to June 2015. A list of key words related to medical tourism was selected as follows: medical travel, dental tourism, health tourism, health service trade, transnational healthcare, medical outsourcing, global healthcare, cross-border healthcare and, treatment abroad. Among these key words, only medical tourism was approved by the mesh term. Four online electronic databases were used for systematic literature search: ISI, Scopus, PubMed and Science Direct. The search strategy was as follows: "Medical tourism" and "Service quality".

Also, the references of the final selected articles to identify papers that might have been missed in electronic database search were reviewed. The primary criteria for the selection of papers was their relationship with medical tourism and existence of keywords in the title and abstract. As regards to the first paper on the topic of medical tourism which was published in 1999, this study was conducted with no time limitations.

The inclusion criteria were as follows:

- Papers were in English language
- Papers were research type
- Papers were downloadable and had full text

The exclusion criteria were:

- Papers with insufficient information about service quality of medical tourism
- Papers were discussed about other domains of medical tourism services (except quality)
- Papers were only available by their abstract
- Case studies, review papers, gray documents, reports and letters

Concurrent with the literature search, summaries of papers including title, author name, publication year, country of study, the number of samples, methods, data collection tool, keywords and findings were entered in the Excel 2010 software. Then, the gathered papers were entered in the Endnote software and duplicate papers in the databases

were removed. Finally, the obtained data were analyzed using descriptive statistics and content analysis.

### Results

The study selection process is shown in Figure 1. The search identified 128 papers and 41 papers were excluded after title and abstract screening due to:

- 4 papers were non-English language
- 18 papers were repetitive
- 19 papers were report type

One additional record was identified through other sources and added to the 87 available papers. A total of 88 papers were reviewed. After a full text review, 71 papers were excluded due to:

- 14 papers had insufficient information about service quality of medical tourism
- 57 papers had discussed about the total domains of medical tourism services

Details of the selected papers were reviewed and extracted by two researchers using standardized abstraction forms. Seventeen papers were completely related to the research questions and were finally studied. Each of the 17 studies were classified according to the following characteristics: authors, year of publication, source country, type of study, study tool, sample size and target population, scope of the study, main findings and notes. Then, data from each of these papers were extracted and entered into a matrix (Table 1).

Most of the papers (9 papers) belonged to the Scopus database. Most of these papers were descriptive. Most of the papers (5 papers) were published in 2014, no paper was found before 2010 (medical tourism is a new topic). Among the 17 studies included in the systematic review, five were from Thailand, 4 from United States, 2 were from India, 2 were from Taiwan and the rest were from China, South Korea, Malaysia and Iran. Six papers through interviews, eight papers through questionnaires and three papers through mixed method (questionnaire and interview) were carried out. In these papers, different individuals were selected as the sample (medical tourists, medical tourism experts, medical tourism service providers, hospital managers and medical tourism agency staff). Ten papers in hospitals, five papers in medical tourism organizations and two papers in social centers and medical clinics were conducted.

### Discussion

In this systematic review, 17 papers in medical tourism service quality were reviewed. As the results show, most of the studies were conducted in hospitals. In general, the two-step model is effective on choosing medical tourism destinations. The first phase was related to the country providing medical tourism services, including economic, political and regulatory environment and the second phase was related to choosing medical tourism agencies, including costs, quality, and qualified doctors (16).

Most papers were carried out in Asian countries, especially East and South-East Asian countries (17-24). The increased competition between different countries, especially developing countries in Asia had begun to

attract health tourists. On the other hand, medical tourism has improved in developing countries. Globalization and

expanding trade in health services led to rapid growth of medical tourism (25).

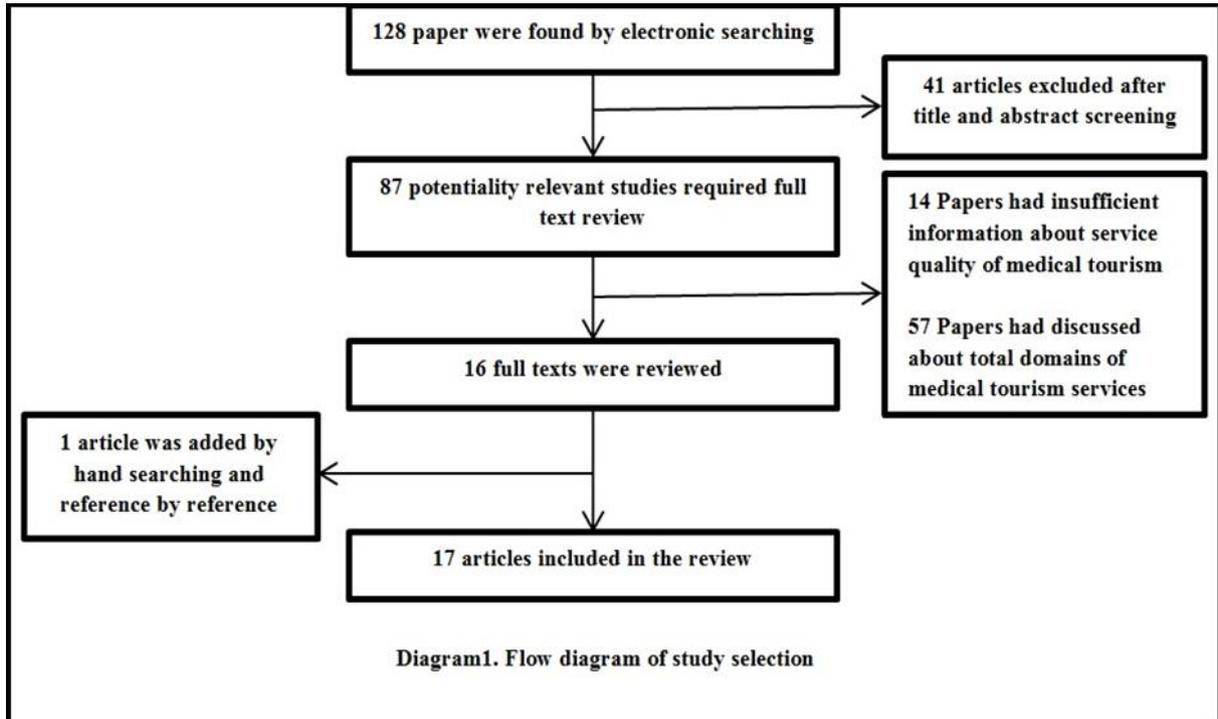


Diagram 1. Flow diagram of study selection

### SERVQUAL and medical tourism service quality

Results indicated that in 3 out of the 17 reviewed papers, the SERVQUAL questionnaire was used. Its dimensions included tangibles, reliability, responsiveness, assurance and empathy (18, 26, 27). One of the methods which is often used to determine and assess the health services quality is the SERVQUAL questionnaire. The SERVQUAL questionnaire measures the service quality through analyzing the gap between patient's expectation and perception. Studies have shown that this questionnaire had a high reliability and validity to assess the quality of medical and hospital services (28). Among these 3 studies, the studies conducted by Ho and Yi (27) and Guiry et al. (26), had the highest and lowest gaps between expectation and perceptions of medical tourism service in terms of assurance and tangibles dimensions, respectively. In a study conducted by Sankrusme, the highest and lowest gaps were in the empathy and assurance dimensions, respectively (20). Parasuraman et al. defined "Tangibles" as the physical facilities, equipment, and appearance of personnel, "assurance" as the knowledge and courtesy of employees and their ability to inspire trust and confidence among consumers; and "empathy" as caring, individualized attention the firm provides for its customers (29).

### Necessary changes to improve the quality of tourism services

One way to improve medical tourist's loyalty, is focusing on the quality of provided services and patient's needs (30). There are many ways to improve the quality of medical tourism. The medical tourism industry must

respond to the medical tourists' needs by coordinating tourism and healthcare services (31). The necessary changes to improve the loyalty that has been mentioned in these studies included airport facilities, hospitality services, quality assurance, security of patient information and follow up system (22).

### Service quality and medical tourist satisfaction

In current competitive conditions, one of the important issues that hospitals deal with is the level of patients' satisfaction. Hospitals use this information to assess their quality strategy and policy for survival (32). Patient satisfaction is a cognitive and emotional reaction that patients declare while meeting their needs. A satisfied medical tourist is more likely to refer to the previous hospital. In addition, these patients have less resistance to pay hospital costs (33). The reviewed studies stated several factors in medical tourist satisfaction. These factors included advanced equipment, skilled hospital staff, reliable and professional doctors, service quality, patient demand perception, confidentiality of medical records, provided medical information by travel agencies, designing standard service process by hospitals, easy entry into the destination country, security, communication, and appropriate infrastructure (19, 20, 27, 31).

**Table 1.** Extraction table of reviewing articles results

No	Author	Year	Country	Type of study	Tools	Target population	Scope of Study	Dimensions of medical tourism service quality	Factors associated with medical tourism service quality
1	Sujatha S and Subhashini R (22)	2015	India (Chennai)	Descriptive , analytical	Questionnaire and literature review	72 foreign patients	Government and private hospitals	Changes that need to be made in the quality of services provided: Airline ticketing, Stay, Hospitality Services.	There is a positive association between the attraction of medical tourism packages (Airline ticketing, Comfortable stay, Low cost treatment, Travel) and duration of stay in the country.
2	Pan TJ and Chen WC (31)	2014	Taiwan (Chiayi)	Descriptive study	Semi structured interviews	18 Chinese medical tourists	Hospitals	Medical tourists' motivation: media advertisements and marketing by travel agencies, recommendations from friends or relatives, a desire to learn about their physical conditions, poor medical quality in their hometown, use of Mandarin, the Chinese government's lifting of the ban on visiting Taiwan, short flight time for direct flights across the Taiwan Strait, and the low cost of medical tourism.	Four factors affected the satisfaction of medical tourists: advanced equipment; professional and skillful technicians; professional and reliable physicians; and the medical quality of a hospital.
3	Grewal I and et al (41)	2012	India (Delhi)	Descriptive study	Interview	44 medical tourists	Tertiary Care private Hospitals	Expectations of Medical Tourists: good quality of care, good hospitality, skilled medical care, less cost of treatment. Perception of medical tourists: Reception services and Admission procedure, Waiting Time for Consultation, Good rooms, toilets, electricity, laundry and food Services, Resident doctors and nurses' good Communication skills, promptness in attending calls, their behavior, punctuality in giving medicines to the patients and skills and efficiency in their work.	Concerns of medical tourists: follow up of medical care after going back to their home countries, skills of doctors, personal safety, qualification of doctors, the risk of post-operative infections, legally protecting, cost of treatment.
4	Ho LH and Yi T (27)	2014	Taiwan	Descriptive study	Literature Review, Focus Group, and In-Depth Interview	8 experts, 133 medical tourists	Medical tourism businesses	Designed questionnaire had 5 dimensions (Tangibility, Responsiveness, Reliability, Assurance, and Empathy) and 31 Indicator. The highest and lowest mean score of the negative quality gap was related to Assurance (-0.066) and Tangibility (-0.024) respectively.	Top five factors in customer satisfaction with quality of service was understanding customer demands, keeping the secret of patients' medical records, having relevant certificates and certification, presenting medical information to customers by travel agents, and designing a standard service procedure by providers
5	Han H and Hyun SS (47)	2015	Korea (Seoul and Busan)	Descriptive study	Literature review, questionnaire	309 medical tourists	Medical clinics	The impact of perceived medical quality on satisfaction, trust, and intentions was greater than that of perceived service quality. In addition, the effect of trust in the clinic on intentions was greater than that of trust in the staff.	Perceived quality, satisfaction, and trust in the staff and clinic have significant associations, affecting intentions to revisit clinics and the destination country; and satisfaction and trust acted as significant mediators.
6	Sankrusme S (20)	2013	Thailand (Bangkok)	Descriptive study	SERVQUAL Questionnaire and in-depth interviews	310 medical tourists, private hospitals	Private hospitals	More satisfaction from dimensions of service quality was assurance, reliability, responsiveness, tangibles, and empathy. In potential readiness to provide treatment, in terms of using foreign language skills in communicating with treatment service users who are foreigners, Level of Satisfaction was low.	Appealing factors: Physicians' expertise, Medical technology and progress, Comprehensive health service, Has a good reputation in the field, Hospital Standard, Medical expenses, and Good reputation for service. Satisfaction with Government Services: Ease of entry to the country, Facilities, Safety, Communication, and Infrastructure.
7	Guiry M and et al (50)	2014	United States (Texas)	Descriptive study	SERVQUAL questionnaire	219 experienced and 1,369 potential	Medical tourism facilitator	All five dimensions, experienced medical tourists had significantly lower expectations than potential ones. The largest difference was the assurance dimension, followed by reliability, responsiveness, empathy and	There were significant differences in 11 of 15 items (up-to-date equipment, neat employees, provide services at the time promised, accurate billing, telling patients

						medical tourists		tangibles.	exactly when services will be performed, employees always willing to help patients, feel safe in interactions with employees, knowledgeable employees, polite employees, employees get adequate support to do their jobs well and have patients' best interests at heart)
8	Delgoshaei B and et al (18)	2012	Iran (Tehran)	Descriptive study	SERVQUAL questionnaire	103 medical tourists and 123 health service providers	Iranian hospitals of medical tourism	Most important medical tourism aspects were high quality of the hospital services, taking hospital international accreditation, accepting foreign health insurances, and transparency of pricing schemes. High performance of medical tourism aspects were transparency of pricing schemes, modern medical equipment, High quality of the hospital services, High variety of the hospital services, and low costs of the hospital services.	"Placement of translators in the hospital", "suitable hospital information giving", "minimum of the time to receive services", "low costs of hospital services", "high variety of the hospital services", "modern medical equipment" and "high quality of hospital services", have a high level of importance and their performance is in high level, as well.
9	Lertwannawit A and Gulid N (19)	2011	Thailand (Bangkok)	Analytical study	Questionnaire	400 international tourists	Private hospitals	Service quality, value, satisfaction, and brand trust are an important mechanism in generating both attitudinal and behavioral aspects of loyalty. A high level of brand trust can reduce the uncertainty level of tourists as they make a final decision.	There are significant positive relationships between service quality and value, satisfaction, and brand trust. Value, satisfaction, and brand trust have significant positive relationships with behavioral loyalty. Service quality has an indirect effect on behavioral loyalty by having value, satisfaction, and brand trust function as mediators.
10	Oh KM and et al (36)	2014	United States (Washington)	Descriptive study	semi-structured focus group interviews	34 Korean American women	Churches or community centers	Factor for seeking preventive care: cost benefit, better quality of medical service/technology, convenient and easy to schedule, and one-stop for all services. The motivation for seeking preventive care: vacation aspect, better communication with physicians, more convenient transportation, and other cultural reasons and visit homeland.	The most critical perceived risk perceived were lack of timely care.
11	Horton S and Cole S (48)	2011	United States (Tijuana)	Descriptive study	Qualitative interviews	15 Mexican immigrants and 9 Mexican Americans	Three private hospitals	The rapidity of services, personal attention, effective medications, and emphasis on clinical discretion as features distinguishing "Mexican medical practice".	They experienced frequent referrals and tests, impersonal doctor-patient relationships, uniform treatment protocols, and reliance on surgeries in the US health care system.
12	Sarwar A (51)	2013	Malaysia (Kuala Lumpur)	Descriptive study	Questionnaire	266 medical tourists	Hospitals in Kuala Lumpur area	Service Quality: Providing right information to patients, improved information services, getting value for spending money, and providing world class service.	The relationship between constructs: There is a significant relationship between destination image and medical tourism and between service quality and medical tourism, and There is no significant relationship between customer service and medical tourism in Malaysia. Destination Competitiveness: efficient staffs, different strategy of hospitals, widely use the English language, frequently visiting the country for medical treatment, and well recognized hospitals.
13	Alleman BW, et al (52)	2010	United States (University)	Descriptive study	Telephone interviews with questionnaire	45 medical tourism companies	Businesses facilitating medical tourism	Quality Assurance Policies for Medical Tourism Facilitation Companies: Quality assurance and data security (Provider accreditation, Collecting patient	-

of Iowa)

satisfaction data, Collecting patient outcome data, Having formal medical records security policies, Facilitate communication between own country and foreign providers), Follow-up care upon return (Patients see own country physicians, Company can help coordinate care, Company has a network of own country Physicians)

14	Wernz C and et al (53)	2014	Thailand (Bumrungrad International Hospital)	Descriptive study	semi-structured interviews	11 top-level BIH executives	Bumrungrad International Hospital	Nine key initiatives that BIH had undertaken to integrate medical services with non-medical services: Customer Focus (1. Service Excellence 2. Extended Customer Perspective) and Operational Efficiency and Quality (3. Transparent, Competitive Prices 4. Optimized, Lean processes 5. Continuous Improvements, Audits 6. Multidisciplinary Approach 7. Mix of International and Local Patients 8. Technology Investments 9. Global Markets and Competitors)	There is a relationship between service integration and service convergence. Service convergence is the emergent phenomenon of a firm's service integration activity of the product and industry level.
15	James PTJ (54)	2012	Thailand (Bangkok)	Descriptive study	semi-structured questionnaire	7 managers of international private hospitals	International Private Thai hospitals	Patients' expectation: Hospital Management (organization and staff development, very expensive medical technologies,...), Hospital Processes (keep patient's records, help patient to make informed choices,...), Hospital Technology (latest technology, decrease hidden costs,...), Quality Related (hospital accreditation, quality auditing,...), Communications (doctors speak English, communicate with patients and their medical advisors while they are at home,...), Personnel (employ the best doctors, very qualified full-time staff,...), Financial ,and Patient (ensuring that patient safety,...)	-
16	Wang HY (23)	2012	China (Chung Hua University)	Descriptive study	Questionnaires	301 medical tourist company's employees	Mainland Chinese Company	Dimensions related to the development of medical quality: highly skilled professionals, hospitals should offer world-class medical facilities and equipment,	The overall perceived value of medical tourism has a positive effect to the intention of potential customers to participate in these tourism activities. Perceived medical quality has a positive effect on the perceived value of medical product offerings among potential customers. Perceived service quality has a positive effect on the perceived value of medical service offerings among potential customers. Perceived enjoyment has a positive effect on the perceived value of medical product and service offerings among potential customers. Perceived risk has a negative effect on the perceived value of the medical tourism product and service offerings among potential customers.
17	Chomvilailuk R and Srisomyong N (17)	2015	Thailand (Pattaya)	Descriptive study	In-depth interviews and questionnaire	15 interviewees and 117 medical tourists	One hospital in Pattaya	The positive perceived congruence of demand-supply medical/health facilities, positive perceived quality of demand-supply medical/health facilities and positive brand image of hospitality facilities lead to a choice of destination brand choice for medical tourism.	'Brand Trust' has possibly been the mediating variable between the relationships between the independent constructs; 'Perceived Congruence of Demand-Supply Medical Facilities', 'Perceived Quality of Demand-Supply Medical Facilities', 'Brand Image of Hospitality Facilities' and the dependent construct, 'Destination Brand Choices'.

### **Motivations of medical tourists**

Motivations in medical tourism are a collection of patients' internal needs which stimulate the patients to travel to the destination country to use the healthcare services. So, recognizing motivations helps policymakers to understand the medical tourists' behavior to choose his/her destination (34). Travel motivations for patients are different. American patients seek medical services in a lower cost compared to their home country. Canadian and British patients travel due to long waiting lists for healthcare services. Some patients have no access to some services in their own country. Some of them also want to spend their leisure time and holiday with elective surgery, including cosmetic surgery (35). In reviewed studies, different motivations were mentioned. They included; travel agencies advertising, friend recommendation, low quality of medical services in the source country, language of the destination country, facilitating government regulation, proximity to the destination country, low cost of healthcare service, skilled doctors, advanced technology, comprehensive health services, good reputation, hospital standards observation, high level of trust, tourism aspects of the destination country, easy communication with doctors, easy travel to the destination country, having shared cultural characteristics, facilities and the equipment at the international standards (20-22, 31, 36).

### **Medical tourists' expectations**

Service quality is a judgment between patient expectation and the perception from the provided services (37). Expectation is the patients' needs from service providers (38). Providing a service lower than expectation always leads to dissatisfied patients (39, 40). Factors affecting the coverage of the medical tourist's expectation included: high quality services, good hospitality, high skill medical care service, low cost care, international accreditation for hospitals, accepting health insurance patients, transparency of prices, receiving all the services in one stage, providing correct information for patients, improving information services, providing services at an international standard, treatment approach based on patient-centered, clinical audit, continuous quality improvement, several educational process, competing with global competitors, investing in new technology, staff and organization development, medical records, physicians familiar with English language, providing staff throughout the day, and patient safety (41, 42).

### **Medical tourists' perceptions**

Patients' perception is their mental belief of the performance quality (43, 44). If the perception is more than expectation, it can be said that the hospital has provided qualified services (45). Providing adequate information about patients' perception of service quality can assist hospitals to detect dimensions and the competitive advantage service quality (46). In these studies, most patients' perception of provided services quality include; desirable admission services, low waiting lists, nutrition services, affordable rooms, high communication skills of staff, good behavior of staff, transparency of cost, new medical equipment, a variety of provided medical services, providing timely care, fast

service delivery, effective medication, and emphasizing the clinical diagnosis (17, 18, 23, 36, 41, 47, 48).

### **Medical tourists' concerns**

Given the fact that the medical tourism industry is growing, its challenges should not be forgotten. Since these challenges are global issues, converting them to opportunities, facilitates the process of attracting patients (49). Since patient awareness is increasing, the patient's thoughts and emotions should be the priority of health centers (33). Follow-up system, qualification and skills of doctors, personal safety, hospital infections, legal protection, and the cost of medical services were the main concerns of medical tourists before travelling to their destinations (41).

The findings of this systematic review were categorized in the following sections: SERVQUAL, the necessary changes, patient satisfaction, motivations, patients' expectations, patients' perceptions, and patients' concerns. Due to the intense global competition among organizations providing health services, there are close relationships between the quality of medical tourism services and the satisfaction of medical tourists. Therefore, these organizations are looking for ways to assess service quality and to improve it. The SERVQUAL questionnaire which measures the gap between patients' expectations and perceptions, is one of the most widely used tools in this field. Observing the variety of dimensions of services quality in medical tourism to attract more patients to the country, is a requirement for the policy of a country's health care system. Therefore, it is suggested to conduct further studies in the field of medical tourism service quality in different countries in order to identify the dimensions of this field and to ensure the quality of provided services at international standards.

### **Limitations**

This systematic review had some limitations:

- The study was conducted for articles. Books, review studies and unpublished papers were excluded.
- English language papers were reviewed. Non-English language papers were excluded from the study.
- There was the possibility of bias by the researchers.
- Because the results were reported on qualitative information, it was not possible to perform meta-analysis.
- The number of papers based on the study subject was low.

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