



Identifying and Prioritizing of Factors Influencing the Entry of Medical Centers on the Medical Tourism Market in Iran

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ABSTRACT

Background: Medical tourism is a fast-growing industry that has provided special opportunities for international organizations to achieve a competitive advantage. This research has been conducted to recognize and prioritize the factors affecting the admission of medical centers into the medical tourism market in Iran.

Methods: The combined study was conducted in two qualitative stages and hierarchical analysis in governmental and non-governmental centers related to medical tourism on 15 experts and specialists in the qualitative stage and 25 people in a quantitative stage. The interview guide was used to collect data in the qualitative stage and the pairwise comparison questionnaire was used in the hierarchical analysis stage. Qualitative phase results were analyzed by conceptual framework method and quantitative phase results were analyzed by AHP method applying 11 Expert Choice software.

Results: 41 sub-themes were identified in the qualitative stage, which were categorized into six groups: service quality, infrastructure, human, information, economic and political. The highest weight or priority was related to the diversity and quality of services and the lowest weight or priority was associated with the field of information and marketing among the six factors based on the Analytical Hierarchy process (AHP) method.

Conclusion: The most significant factor for medical centers to join the health tourism market is to focus on the quality of provided services based on the results. It is recommended that medical centers provide all services from the time of admission to follow-up after discharge in the context of intelligent and web-based systems in order to strengthen the quality of services, in addition to standardize departments and treatment processes according to international standards.

Key words: Medical Tourism, Hierarchical Analysis, Prioritization

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Introduction

Medical tourism is currently one of the most significant indicators of the tourism industry and has high socio-economic advantages so that the combination of medical tourism with consumer health guidance programs is potentially a method to quicken the development of medical tourism and economic development (1, 2). The infrastructure of health care and high costs in the West has become one of the principal factors in developing and prospering medical tourism. In the UK, public health services have a long waiting list of patients. In the United States, the health care crisis holds many dimensions. It has 50 million citizens without insurance. While people with insurance should pay a high value for health care facilities. Add the severe rules and regulations for issuing visas to European countries and the United States after 9/11 to these cases (3, 4). Notwithstanding, the low cost of health markets and inexpensive transportation have produced opportunities to develop medical tourism in developing countries (5, 6).

This branch of tourism has expanded significantly in recent decades. Many Asian countries, including Thailand, Singapore, South Korea, India, and Malaysia, are among the preeminent countries in this industry; so that, it attracts nearly 1.3 million medical tourists from around the world yearly, which is an upward trend (7-9) so that the value of the Asian medical tourism market in 2012 is about the US \$ 4 billion (10, 11). Our country, regarding its advantages in medical tourism, such as favorable geographical location, low service costs, appropriate equipment, and qualified physicians, attempts to use the opportunities available in the international health services market (12-15). The Fourth Development Plan of the country additionally emphasizes the development of medical tourism as a legal commitment (16, 17).

According to the World Trade Organization, the tourism industry had been ranked third in international trade after oil and the automotive industry (18, 19). According to the predictions of the World Tourism Organization, the future of the

world economy and international trade market, particularly in 2020 with 1.360 billion incoming tourists and 1.809 billion people in 2030 will be provided for the tourism industry. This can be achieved in the circumstances that in 2020, over 717 million and in 2030, over 1.037 trillion tourists will travel to developing countries. This is an opportunity for countries that often experience the social and economic phenomena of unemployment and insufficient foreign exchange incomes (20).

According to statistics provided by the World Tourism Organization/UNWTO, more than five percent of the employment problem in developing countries can be resolved through developing this industry. The organization has additionally estimated the global medical tourism horizon by 2020 with revenue of \$ 1.6 billion (21). The profit margin created in Asia has been \$ 3.4 billion in medical tourism in 2007 (22).

The tourism industry in Iran holds a very high capacity for growth and development. According to the World Tourism Organization, Iran has the tenth rank in ancient and historical attractions and fifth in the world in terms of natural attractions. In fact, Iran could potentially attract five percent of the total health care payments to neighboring countries that is the amount of \$ 5.2 million, or 1.3 percent of their non-oil export incomes (23).

However, Iran's portion of medical tourism in the world is insignificant and the reality shows that policymakers have not been able to operate for developing medical tourism like other competing countries. In fact, it can be stated that the distance between the current situation in attracting tourists and what can be regarded as a pleasant situation is very considerable. Although different studies have been conducted in this field, prioritizing the factors influencing the admission of medical centers into the medical tourism market in Iran has also been arranged in order to plan on some aspects of medical tourism in this study as a combined study, while identifying the factors.



Materials and Methods

This study was conducted in a combined form (quantitative-qualitative) in 2019 in two stages of the qualitative interview and hierarchical analysis.

The qualitative stage was performed in the form of content analysis in order to identify the factors and necessities of medical centers to join the medical tourism market in Iran. The data was collected at this stage using a semi-structured qualitative interview guide. The research environment was the Health Tourism Office in the Ministry of Health, Treatment and Medical Education, research institutes and research centers related to health tourism, the Cultural Heritage and Tourism Organization, as well as educational departments available in medical universities in Tehran. The research population included experts and intellectuals in the field of medical tourism and tourism. Fifteen experts who had at least four years of experience in tourism or medical tourism centers, or conducting research in the field of health tourism or a doctorate in tourism were studied. Other stakeholders and experts were identified and added to the model during the primary interviews, through snowball sampling and by questioning the interviewees, as well as the information gathered from the analysis of the interviews and the analysis of documents. All interviews were conducted by the researcher. The interview guide was practiced to conduct the interviews. Interviews normally started with simple, general topics and changed to particular questions. During the interview, more detailed and in-depth information was collected from the people using in-depth questions. The interviews are recorded with two tape recorders to be ensured at the start of each interview by providing the inevitable and sufficient explanations about the significance of recording the interview and guaranteeing that the content of the interviews is kept private and with their permission. The interview continued between 25 and 35 minutes. Qualitative data analysis was conducted by the conceptual framework method in five stages of familiarization, conceptual framework development, cataloging, table drawing, and mapping and interpretation. Upstream documents were

additionally utilized in the factor classification stage. Transferability, correspondence, and verification were employed to determine the validity of the interviews.

In the second step, the research sample involved 25 experts in the field of medical tourism. At this stage, the extracted factors were arranged in the form of a questionnaire consisting of 6 general fields in such a way that each factor was compared with each other in the form of pairwise comparisons. Hence, the samples were asked to compare each factor with other factors and identify its importance. The importance of the factors was based on the model of the hierarchical analysis process on a completely important scale, very important, more important, somewhat more important, and the same, which was shown by the numbers 9, 7, 5, 3, and 1, respectively, which experts according to the importance of each factor recognized the corresponding number.

For example, the quality factor has been evaluated as somewhat more important than the expertise factor in the following example. Accordingly, the right part, which is related to quality, has been marked.

The validity of the questionnaire was confirmed by 5 faculty members familiar with the field of health tourism and expert in this field and the reliability of the questionnaire was estimated by Cronbach's alpha coefficient ($\alpha = 0.87$). Oral consent was achieved from all participants in the study. Data was analyzed applying AHP method (Table 1) with the help of 11 expert choice software. The article's proposal was approved by the ethics committee of Tehran University of Medical Sciences with the ID of IR.TUMS.VCR.REC.1395.1020.

Table 1. Example of prioritizing factors in AHP technique

Quality	9	7	5	3	1	3	5	7	9	Infrastructure
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Results

54 % had a history of more than 20 years in the quality department among a total of 15 people. 33 % were younger than 40 years old, 52 % were between 40 and 50 years old and the rest were



older than 50 years old. 15 percent worked in the Ministry of Health and Medical Education, 22 percent in the Cultural Heritage and Tourism Organization, 38 percent in research centers, and the rest in university-affiliated departments in terms of employment. 60 % of the faculties were in medical universities or research centers and 40 % were not members of the faculty in the quantitative stage among 25 participants. 16 % were female and 84 % were male. Additionally, the majority of them had work experience between 11 and 20 years old (56 %) (Table 2).

In the qualitative phase, 6 general themes and 41 sub-themes were recognized that the details of each one has been presented in Table 3.

Based on the method of hierarchical analysis and pairwise comparisons in total requirements, the highest weight or priority was related to the field of diversity and quality of services with the importance of 0.39 and the lowest importance or priority was related to the field of information and marketing with the importance of 0.05 (Table 4) (Figure 1).

Table 2. Frequency and percentage of demographic variables of study participants in the quantitative phase

Variable	Type	Frequency	Percentage
Employment Status	Not members of the faculty	10	40
	Faculty members	15	60
Sex	Male	21	84
	Female	4	16
Work Experience	1-10	6	24
	11-20	14	56
	21-30	5	20
Age	31-40	13	52
	41-50	12	48

Table 3. Themes and sub-themes affecting the entry of medical centers into the medical tourism market

Theme	Sub-theme
The quality of service	Improving the quality of services provided in hospitals and treatment centers, receiving valid quality certificates, improving the welfare facilities concerning patients and companions, establishing a follow-up process after discharge, specialization of hospital services, promoting hotel services, establishing an electronic response system
Infrastructure	Enhancing the physical and therapeutic capacity of the hospital, launching the private departments, upgrading advanced medical equipment, setting international flights for health tourists, establishing electronic payment facilities, establishing a system for registering, controlling, and counting medical tourists, establishing high-standard accommodation centers near the medical centers and facilitating travel within the country for health tourists
Manpower	Employing experienced physicians in various specialties, the familiarity of physicians specializing in foreign languages, specialized medical tourism education for physicians and nurses, getting international certification for physicians, providing the trust in medical personnel and the reputation of Iranian physicians in some special fields
Information and marketing	Development of a coherent marketing strategy in medical tourism, proper advertising of medical tourism in target countries, enhancing the efficiency of the information system in identifying the capabilities of medical tourism in Iran, the presence of the brand of medical tourism in Iran, raising advertising of medical tourism in the media and active attendance of medical centers in distribution challenges and international sales of medical services
Economic	Low costs of medical services, low cost of hospitalizations, fixed tariffs for medical services, low cost of transportation, the establishment of a formal licensed foreign exchange center, increasing the government investment in medical tourism, and support for the private sector for investment in medical tourism
Political	Developing policy and planning to develop medical tourism, the presence of an inter-sectoral institution, setting proper cooperation between travel agencies and medical centers in Iran, utilizing medical tourism facilitation companies, preparing different sectors of the tourism industry such as tour operators, hotels, and travel agencies for active presence in the field of

Table 4. The weight/importance of each factor in terms of the perspective of the samples

Whole requirements	Symbol	Factor loading
The quality of services	Quality	0.39
Infrastructure	Infrastructure	0.12
Human	Human	0.24
Information and marketing	Information and marketing	0.05
Economic	Economical	0.11
Political	Political	0.09

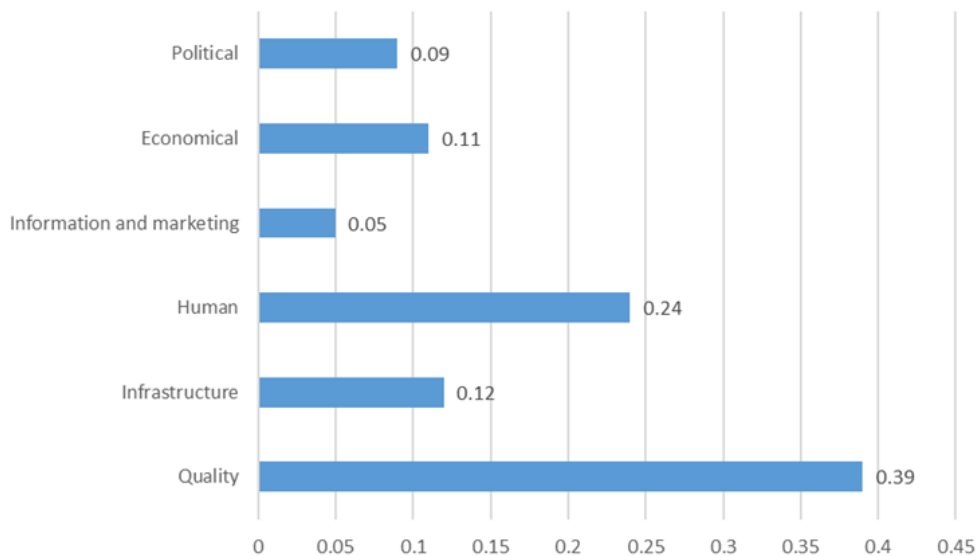


Figure 1. Showing the weight/load of factors in six areas

Discussion

The most significant factors influencing the entry of medical centers into the medical tourism market in Iran were identified and prioritized in this research. These fields include quality factors, information and marketing factors, political factors, infrastructure factors, economic factors, and human factors. Important sub-criteria additionally include such cases as coordination of institutions related to medical tourism, the existence of low costs of medical services, development of a coherent and effective marketing strategy in medical tourism at the micro and macro level, and the presence of qualified physicians in different specialties, providing advanced medical equipment in hospitals and treatment centers and increasing the quality of services provided in hospitals and treatment centers among the general

sub-areas that achieved the highest priorities among the sub-criteria among each field and were considered more fundamental requirements according to the experts' point of view to achieve the tourism core. Sadr Momtaz and Agha Rahimi (24) also presented in a study that the most important factors to develop the health tourism industry in Iran are public infrastructure development strategy, human resources development strategy, information system development and marketing strategy and product development strategy. Torani et al. (25) have studied the challenges and opportunities of international health services trade in selected ASEAN countries (including Malaysia, Singapore and Thailand). According to their findings, the most significant challenges to developing the health services trade in the ASEAN region are



quicken the accreditation of service centers, insurance transferability, private sector support, public-private cooperation, and trade development based on each country's comparative advantages in agreement with the development of the health part that the findings of the above studies are in agreement with the results of this study and consider the stated components required for Iran to enter the medical tourism industry. Based on the findings concerning a study conducted by Badieli et al. (24) in The north of Iran, the most efficient main criteria in the development of medical tourism in Golestan have been identified as of importance, infrastructure criteria, physician criteria, and quality criteria, respectively. Raising the level of private participation in the development of medical tourism in Golestan province, establishing special hospitals and clinics for medical tourism, and public sector participation and support of the private sector can be mentioned among the solutions presented in this study (24). Bagheri et al. (26) in their study entitled factors influencing the factors modifying the development of medical tourism stated that most studies centered on the role of information and communication technology, marketing, cooperation between private and public organizations, accreditation, and increasing the quality-of-care services in medical tourism development. As the results of this study explain, it can be stated that the development of infrastructure, informing and marketing systems, health insurance, transportation services, information and communication technology, legal and accreditation issues, developing the quality of services and care facilities, etc. are among the effective factors in the medical tourism industry.

In another study, Ye et al. (27) tested the motivations of Hong Kong medical tourists employing a comparative approach to the theory of pressure and attraction motivation. The results of their study explain that these tourists essentially pay more attention to medical issues than the features of the destination. The motivational factors they analyzed included destination characteristics, quality of health care, promotion,

companionship, cost, and reputation. Kim et al. (28) in a study in South Korea showed that the weaknesses of South Korean medical tourism include an incompetent promotion, lack of a centralized administrative support system, lack of a differentiation strategy according to competing countries, inadequate number of medical tourism experts, and lack of an acceptable legal system. In another study in Jordan, raising the quality of health services such as specialist doctors, modern technology, concluding a mutual contract between Jordanian private hospitals and the regional board to refer patients to Jordan, providing facilities for investors, and receiving international quality accreditation have been considered among the factors to be effective in promoting and developing medical tourism in Jordan (29).

Factors such as increasing the quality of services provided in hospitals and treatment centers, achieving international quality approvals by hospitals and treatment centers, increasing proper welfare facilities for patients and their companions in treatment centers, the possibility of follow-up the patient's condition after discharge from the hospital, providing various specialized services in hospitals, upgrading hospital hoteling and responding system to medical tourists in medical centers were identified in the requirements related to increasing the diversity and quality of services, which the quality of services achieved the highest priority. Compatible with these results, Hong Lang considers the lack of infrastructure organizations to provide and improve the standard and quality of services as one of the major barriers to the development of medical tourism (30). A study conducted by Carruth et al. (31) explained that the principal reasons related to Americans traveling abroad to have medical care, in addition to the high cost of health care in the United States have been explained to provide proper care packages and to share health insurance in transferring the patients to the destination of medical tourism and the proper quality of medical services in the considered destination (31). The most significant factors were selecting medical tourism positions in terms of expense, quality, and qualified



physicians in the studies in a systematic review study conducted by Torabipour et al. (32). The study conducted by Pan et al. (33) in Taiwan similarly recognized four factors on the satisfaction of medical tourists: advanced equipment, professional and skilled technicians, professional and reliable physicians; and the medical quality of a hospital. A study conducted by Han et al. (34) in Korea pointed to the importance of perceived quality of services in tourist destinations. Chomvilail et al. (35); in Thailand additionally considered the role of perceived quality of medical facilities in medical tourism hospitals to be significant. This study and other similar studies explained that paying attention to the quality of services, particularly the internationalization of quality through applying international standards and obtaining credentials and quality certificates, plays a significant role in increasing medical tourists to these hospitals.

Factors such as increasing the capacity of hospitals, building a separate hospital for medical tourists, providing advanced medical equipment in hospitals and medical centers, organizing international flights for health tourists, performing electronic payment facilities for patients, creating a registration system, control and the census of medical tourists, the establishment of high-standard accommodation centers near medical centers and the facilitation of domestic travel for health tourists were recognized by experts in health infrastructure requirements. Some experts, such as Prideaux (36) and Katircioglu (37), declare that the level of infrastructure development (consisting of roads, water, electricity, safety services, health services, communications, and public transportation) is considered as determining factors in the arrival of tourists to any region and the tourism infrastructure and the level of development in the destination country are among the most significant factors determining the arrival of tourists. Lee analyzed the role of the health care sector in international tourism and the influence of international tourism on how health care is analyzed in Singapore in his study. The results

explain that in the long term, there is a one-way causal relationship between health care and international tourism and the influence of health care on international tourism is positive while, no relationship has been identified between them in the short term. He concludes that the recent efforts of the Singaporean government to turn Singapore into a medical center will attract more international tourists in the long term (38). Hosseinpour et al. (39) in their study in Ardabil pointed to the significant role of developing the infrastructure of medical centers in attracting medical tourists. Crooks et al. (40) considered issues such as the development of information and communication technology and the ease of access to different information, the expansion of international airlines, the improvement of medical equipment among the essential factors of medical tourism centers in developing countries. Lehmann stated in his study that the development of health tourism in Croatia in the first point wants an increase in investment in services and essential infrastructure-accommodation and equipping of medical centers (41). Saghaei (25) concluded that the development of the Mashhad aviation industry has produced the highest influence on increasing the number of incoming tourists to Mashhad. Delgoshaei et al. (42) stated in their study that Iran experiences challenges in attracting medical tourists in the field of fundamental and medical infrastructure. A study conducted by Mohammadi et al. (43) in Kurdistan indicated that the lack of services and welfare - accommodation facilities and the weakness of transportation infrastructures have the highest influence on tourist dissatisfaction. Incompetent transfer from airport to the hospital, lack of agencies for patients, inadequate public and intercity transportation, inadequate transportation roads to Tehran, incompetent health and safety in terminals, lack of guides in terminals, lack of signposts, low flights on busy routes, and long pauses for tourists, incompetent security of old and unreliable flights, lack of location of medical facilities and services in close distance to each other and their dispersion, inadequate internet access in hospitals, inadequate hoteling of



hospitals, were all items that were extracted in qualitative interviews in Kurdistan in evaluating health tourism centers and are in agreement with this study. Mahdizadeh et al. (44) in their study in Ahvaz city stated that medical, service and welfare infrastructure in Ahvaz city satisfies the requirements of tourists and explains their high satisfaction with this infrastructure, but, medical infrastructure cannot realize the needs related to the tourists in this city according to the point of view of specialists and experts of medical centers.

Factors such as the presence of qualified physicians in different specialties, the familiarity of physicians specializing in foreign languages, specialized medical tourism training for physicians and nurses, getting international certification for physicians, developing trust in medical staff and Iranian physicians were recognized in some specific majors in the field of human requirements. Karroubi et al. (45) stated in their study that providing acceptable medical services, employing experienced and specialized physicians, and reducing the cost of treatment are among the strategies to develop medical tourism. Nikbin et al. (46) stated in their study that physicians' expertise foretells hospitals' credibility in the field of medical tourism, which influences Malaysia's reputation as a medical tourism destination. Mousavi Nejad et al. (47) stated that their study in the study of Tehran Armed Forces Hospital is rejected that the studied hospital, due to its human and physical resources and particularly up-to-date equipment, will not need massive investments in attracting medical tourists, which shows the proper situation for infrastructure and manpower.

Developing a coherent marketing strategy in medical tourism, proper advertising of medical tourism in target countries, enhancing the efficiency of the information system in identifying the capabilities of medical tourism in Iran, the existence of Iranian medical tourism brand, increasing medical tourism advertising in the media and the active presence of medical service centers in the international distribution and sales channels of medical services are among the significant strategies to improve medical tourism in

medical centers in the discussion of information and marketing.

Nikraftar et al. (48) declared in their study that according to the importance of medical tourism and the income creation of this industry for the country, one of the methods to increase tourist attraction and to have influence tourists' decision to select Iran as a destination country is an advertising and providing enough information. More information can be provided to tourists and the requirement for health tourism can be increased by increasing advertising and diversifying advertising tools. The results of the studies conducted by Martin et al. (49) indicated that the role of advertising and providing the information is very influential in the development of tourism, and countries should expand their regular system and marketing activities in order to inform in order to succeed in the field of tourism. Tourists should be attracted by different marketing methods. Wilderic and Baron Fost conducted a study in Argentina. Their research showed that internet marketing has made the country a center for cosmetic surgery (50). But some countries, contrary to the findings of this study, attract tourism by possessing an informal and incoherent marketing network through word-of-mouth marketing. For example, Yooh et al. (51) state that what attracts medical tourists to Malaysia is the family, friends, relatives of the tourist, and the physician they visit. Accordingly, the method of information and marketing of medical tourism services is very significant in attracting tourists and it is essential to have an organized information network.

Economic factors include low costs of medical services, low cost of hospitalization, fixed tariffs for medical services, low cost of transportation, the establishment of a licensed foreign exchange center, increasing the government investment in medical tourism, and support for the private sector for investing in medical tourism are among the most significant factors in developing the medical tourism centers according to the experts' perspective in this study. The results of studies conducted by Ramirez (52) and Boyer (53) indicate that increasing the medical costs in the United States and



long lists in the United Kingdom and Canada have caused that many patients in the United States and Europe to travel to developing Southeast Asian countries for medical care. Maboudi et al. (54) stated in their case study in Iran that the cost of medical services was a determining factor in selecting the medical tourism destinations. Hajinejad et al. (55) showed in their study of Mashhad that considered low medical costs in Iran as a factor in attracting medical tourism. Developing policy and planning for the development of medical tourism, the presence of an inter-sectoral institution, establishing proper cooperation between travel agencies and medical centers in Iran, applying the medical tourism facilitators, the willingness of various sectors of the tourism industry such as tour operators, hotels and travel agencies for an active activity in the field of medical tourism, satisfactory government support for the development of medical tourism in Iran is one of the most significant political factors in advancing the objectives and attracting medical tourism according to the expert's perspective in this study.

Naami et al. (56) stated in their study that the university requires well-planned planning, establishing support infrastructure for foreign patients in order to implement the medical tourism program. Badiei et al. (24) in their study considered significant the participation and support of tourism by the public and private sectors.

One of the constraints of the study was the fact that experts allocate insufficient time. According to the fact that a significant part of the interviewees was in the field of medical tourism, they either refused the interview on the appointed day or devoted little time to it due to their busy schedule, despite earlier settlements.

Conclusion

In this study, the most significant factors to join the medical centers the medical tourism market in Iran were identified and prioritized. The results indicated that the most important factor for medical centers to join the health tourism market is to focus on the quality of provided services. Supposing that the medical tourists enter other countries in order to

receive better services due to the absence of quality services in the country of origin, therefore, it is essential for hospitals that pursue the prospect of becoming health tourism centers, in the first place, to focus on services quality more than other aspects. In this regard, it is recommended that medical centers to provide all services from admission to follow-up after discharge in the context of intelligent and web-based systems in order to strengthen the quality of services while standardizing treatment departments and processes based on international standards.

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Conflict of interests

The authors declared no conflict of interests.

Authors' contributions

Baghian N and Dehghani MH designed research; Baghian N and Dehghani MR conducted research; Baghian N analyzed data; and Dehghani MH and Dehghani MR wrote manuscript. All authors read and approved the final manuscript.

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