

Knowledge and attitude of students of medical sciences universities regarding health tourism: A cross-sectional study

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Abstract

Background and Aims: Health tourism is already one of the most important sources of revenue for many countries all over the world, but it appears that it has not progressed as much in Iran. The aim of this study was to determine the knowledge and attitudes of students of Iranian medical sciences universities about this subject, which could have a great impact on the future of this industry in Iran.

Methods: In this cross-sectional study, the students of medical sciences universities in Iran were selected through convenience sampling; they filled out an online 36-item self-administrated questionnaire. The data were analyzed using SPSS software (version 25). Descriptive statistics of knowledge and attitude were provided. Also, independent samples *t*-test and analysis of variance were used as statistical tests and *p* value <0.05 was considered as the significant level.

Results: Overall, 390 students with a mean age of 24 ± 1.5 years and a female-to-male ratio of 1.9 participated in this study. The respondents answered 38% of the questions correctly in the knowledge section. Age, ethnicity, education level, job experience, experience of a health tourism-related job, participation in health tourism courses, and geographical region of the province of residence showed a significant association with the participants' knowledge. Also, most participants had an almost positive attitude regarding the potential for development of the industry.

Conclusion: According to the results obtained, the students' knowledge about health tourism was not desirable; however, their attitudes were almost positive. Therefore, educational interventions are highly recommended to be conducted in this regard.

KEYWORDS

attitude, health tourism, Iran, knowledge, medical tourism, students

1 | INTRODUCTION

According to the World Tourism Organization (UNWTO), health tourism is defined as a travel with the primary goal of improving physical, mental, and/or spiritual well-being through medical and

wellness-based activities.¹ and is one of the most profitable industries in the healthcare area.^{2,3} There are three types of health tourism, including preventive (wellness) tourism, curative (therapeutic) tourism, and medical tourism.^{4,5} Preventive tourism is a travel without medical supervision and with the goal of relaxation,

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recreation, and enjoyment, and the tourist has no illness. If the travel is performed with the purpose of a medically supervised convalescence or the treatment of a specific condition, it is called curative tourism. If the trip is taken for the aim of treating a specific physical disease or performing surgery under medical supervision at hospitals or medical centers, it is considered as the medical tourism.⁴⁻⁶ Globally, the revenue of the industry was approximately \$55 billion in 2020, which is expected to reach more than \$200 billion by 2027.⁷

According to a research by white and Cauley,⁸ which emphasized the need for medical students to focus on medical conditions in the context of economic, political, cultural, and contextual factors which can be beneficial in the nation's medical-related industries.

Based on another study, the knowledge and attitude of healthcare practitioners, including medical students, are critical characteristics in the medical tourism sector.⁹

Literature also showed that expert human resources with international standards was one of the most important challenges which Iranian medical tourism industry faced,¹⁰ and has contributed to the decline of this country in Iran, as Iran is ranked 46th among countries with medical tourism industry according to the Medical Tourism Index (MTI 2020) ranking list, and its turnover was \$400–\$500 million: only 0.009 of the global amount,¹¹ while this country has well-equipped hospitals and medical centers, expert medical professionals, and many tourist attraction throughout it.¹²⁻¹⁶

To the best of our knowledge, there is no study assessing knowledge and attitude of the university students toward health tourism at the national level in Iran. Therefore, this study was conducted aiming to determine the level of knowledge and attitude of students in medical sciences universities in Iran and clarify the relationship of students' background and their knowledge toward this promising and profitable industry, which provides policymakers with a better understanding about this determining group and helping them in their future decision-making.

2 | METHODS

2.1 | Setting and participants

This cross-sectional study was carried out using convenience sampling from November 2022 to February 2023 in Iran. Individuals being students of medical sciences universities were eligible to participate in this study. Except for a lack of willingness to participate in this study, there were no exclusion criteria. According to a report released in 2016, the number of students studying in medical sciences universities in Iran was 250,000¹⁷; using the Cochran formula

$$\left(n = \frac{Nz^2pq}{Nd^2 + z^2pq} \right),$$

we calculated the sample size as 390 with a confidence level of 95% and an error of 4.96%. The data collecting technique in this study was an online self-administered questionnaire, and the link to it was sent to the online channels and groups of Iranian medical

sciences universities in popular social network in Iran: WhatsApp and Telegram. The data collection was continued until data saturation was achieved. The survey was completely anonymous.

2.2 | Data collection

The questionnaire consisted of 36 items divided into three sections: sociodemographic characteristics information, and knowledge and attitude regarding health tourism. The first section included 14 items on the demographic characteristics of the participants. The second section was comprised of eight items on their knowledge of the general information in health tourism area. The third section had 14 items regarding the attitude of the respondents.

In the first page of the questionnaire (introductory page), the necessary information about the study aims and conditions was provided for informing the people, and if the participants agreed to take part in this research, they could start answering the questionnaire, just after selecting the voluntary participation item and select the item of informed consent.

Next, there were demographic questions which gave us information about the second objective of this study.

In the knowledge section, each question had a number of options and the respondents were asked to choose the correct answer. They could also select over one choice as they could think it might be correct. Then, we defined three categories to score this section: completely correct, incompletely correct, and incorrect/not knowing the answer; the total score of knowledge was up to 16.

We considered the participants' knowledge, "inappropriate," "roughly appropriate," and "appropriate" if they obtained less than 40%, 40%–70%, and more than 70% of the total achievable scores, respectively.

The next section of the questionnaire evaluated the participants' attitude toward health tourism, and we divided the questions into two subgroups; 11 questions were scored based on a five-point Likert type scale (1: *Strongly disagree*; 2: *Disagree*; 3: *Neither agree nor disagree*; 4: *Agree*; 5: *Strongly agree*), and the three extra questions had a number of options with answers reported separately.

The validity of the questionnaire was approved by an expert panel which consisted of professors and researchers of health services management and health economics fields. The Cronbach's alpha was 76% for the knowledge, 80% for the attitudes, and 78% for the whole questionnaire. Then, the link of the questionnaire was sent to various channels and groups of medical sciences universities via social network platforms, inviting students to participate in this study. It should be mentioned that those questionnaires which were not completely filled out or submitted were automatically removed, so there was no missing data in the final submitted questionnaires.

2.3 | Data analysis

In this study, the data were analyzed using IBM SPSS Statistics software (version 25). Quality assurance was performed by

supervising the process of data collection, data extraction, data entry to the software, and data analysis. To determine the mean score of knowledge, the standard deviation,¹⁸ and mean score for knowledge were calculated. Descriptive statistics regarding knowledge and attitude were provided in Tables 2 and 4. The relationship between demographic information (qualitative variables) and mean score of knowledge (quantitative variables) was assessed via the independent samples *t*-test and analysis of variance.¹⁹ Tests were two-sided and *p* value less than 0.05 was considered statistically significant.

2.4 | Ethical considerations

Designing an anonymous questionnaire, possibility of access to the researchers of the study, and privacy and confidentiality of the data were highly taken into account in the study. Furthermore, voluntary participation was highly considered in this study by asking interviewees' willingness to participate in this study and electronic informed consent was obtained from each participant at the beginning of the web-based survey. Participants could withdraw from the survey at any moment without providing any justification. The proposal of this study was approved by the Ethics Committee affiliated to Shiraz University of Medical Sciences (SUMS), Shiraz, Iran with the code of IR.SUMS.NUMIMG.REC.1401.071. In addition, the declaration of Helsinki, which is the ethical principle for medical research involving human subjects, was considered in this study.

3 | RESULTS

A total number of 390 students from almost all medical universities in Iran participated in this study. Their mean age was 24 (SD = 1.5) years, the female-to-male ratio was 1.9, and 53% (*n* = 207) were pursuing a bachelor of sciences program. Less than 20% of them had participated in health tourism courses and only a small amount of ever-worked students (*n* = 17 out of 124 persons) had an experience of a health tourism-related job (Table 1).

The mean score of knowledge was 6.2 (SD = 2.1), demonstrating 38% of total achievable score. The first item was about the definition of health tourism, in which almost half of participants did not show any level of knowledge. Questions 2–5 asked about the types of health tourism and their definition, and those participants who answered completely or incompletely correct in terms of definitions of wellness tourism, curative tourism, and medical tourism were 7%, 11%, and 17.6%, respectively. In addition, 43.9% of the students fully or partially knew the advantages of this industry. In the last two questions, 10.5% and 17.9% of the respondents completely knew the international and national poles of health tourism, in turn (Table 2).

The univariable analysis showed that participants aged 25–35 years had a higher level of knowledge compared to other age groups. Also, male students had a better level of knowledge regarding the industry. Those with a lower level of education had a lower level of knowledge as well. The married participants showed a better level of

knowledge. Fars students had a higher knowledge compared with other ethnicities. Those who lived in urban areas had a better knowledge in comparison with the subjects who lived in rural areas. The residents of the central and northern regions had a higher level of knowledge compared to the other regions of Iran. Students who studied nonclinical majors had a higher level of knowledge. Also, those who had a job experience showed a better knowledge. Students who had an experience of health-tourism-related works showed a better knowledge. The subjects who participated in at least one health-tourism course had a higher knowledge level (Table 3).

In terms of attitudes, over two-thirds of the students believed that health tourism industry should be recognized and developed in Iran, while only 30% thought that health tourism industry in Iran was able to compete with international markets. Also, 76.1% of the participants considered Iran as a country with many particular and ironic tourist attractions, which is appropriate enough for attracting health tourists; over half of them assumed that Iran had the appropriate medical equipment and technological devices to attract health tourists. Furthermore, almost three-fourths of students believed that medical professionals in Iran were skillful and trustworthy, and approximately 50% did not have any opinion about whether health tourism could improve the medical knowledge level of medical professionals or not. Moreover, about half of the participants did not have an idea about whether health tourism-related education was more useful for medical sciences students or medical professionals, or whether students of a certain field had priority in this regard (Table 4).

Additionally, the participants' thoughts about three extra attitude items were assessed, as mentioned below.

High quality and low price of services (71.2%), positive international image of the destination country (58.5%), and an ability to treat a specific type of disease (53.1%) were the most repeated effective factors of attracting foreign patients in the students' opinions. Also, the participants thought cosmetic surgery (68.7%), organ transplantation (53.6%), and dental services (48.9%) were the best types of medical services which can be effective in attracting foreign patients and turning Iran into a health tourism hub. Moreover, the majority of the participants (71.3%) considered hybrid classes (a combination of theory and practical classes) as the most effective form of enhancing learning toward health tourism.

4 | DISCUSSION

Health tourism is considered as one of the most profitable industries in the healthcare area all over the world.²¹ It can benefit the health systems of nations, especially in the third-world countries where there is more shortage of budget and revenue.^{22,23}

This study showed that the level of knowledge of students toward health tourism was undesirable since they responded less than 40% of questions correctly. Even almost half of the respondents did not know this industry or had a wrong knowledge about its concept.

TABLE 1 Demographic characteristics of the participants ($n = 390$).

Variable N (%)		Variable N (%)	
Age (year)		Education Level	
<25	221 (56.6)	Associate degree	19 (4.8)
25–35	158 (40.5)	Bachelor of Science	207 (53)
>35	11 (2.8)	Master of Science/Professional Doctorate	136 (34.8)
Mean age	24 (SD = 1.5)	Doctor of Philosophy/Medical residency	28 (7.1)
Gender		Major of study	
Male	132 (33.8)	Clinical-based majors	228 (58.4)
Female	258 (66.1)	Nonclinical majors	162 (41.5)
Marital status		Having a job experience	
Single	266 (68.2)	Yes	124 (31.7)
Married	124 (31.7)	No	266 (68.2)
Ethnicity		If yes, having experience of a health tourism-related job?	
Fars	178 (45.6)	Yes	17 out of 124 (13.7)
Turk	93 (23.8)	No	107 out of 124 (86.2)
Lor	71 (18.2)	Having ever participated in health tourism courses	
Kurd	36 (9.2)	Yes	73 (18.7)
Other	12 ²⁰	No	317 (81.2)
Living area		If yes, were they in the curriculum of your major of study?	
Urban area	373 (95.6)	Yes	15 out of 73 (20)
Rural area	17 (4.3)	No	58 out of 73 (79.4)
Geographical region of province of residence		How many most-spoken languages are you completely fluent in? (Arabic, Chinese, English, French, Russian and Spanish)	
North	28 (7.1)	None	291 (74.6)
South	119 (30.5)	One	82 (21)
Central	165 (42.3)	Two	15 (3.8)
East	58 (14.8)	Three and more	2 (0.51)
West	20 (5.1)		
Do you consider yourself as a person with a wide social circle and able to easily and effectively communicate with others?			
Yes		245 (62.8)	
No		145 (37.1)	

Consistent with our study, two studies by Zia Sheikholeslami et al.^{24,25} showed that less than 20% of medical sciences students and graduates in Rafsanjan, Iran, and staff of Qom Medical Sciences University had heard about health tourism. Also in our study, the students' knowledge was higher about medical tourism among all types of health tourism industry, which may be rooted in the fact that the other types are less advanced than medical tourism in Iran, especially due to cultural and religious issues.²⁶

Similar to our study, a research by Malik et al. studied the knowledge and attitude of Sudanese medical students toward global

health education containing several topics, including medical tourism. The study revealed a poor level of knowledge among most participants, like what we found. Also, mean knowledge scores have shown a positive correlation according to the grade of the medical student, which we similarly found out that students with higher education levels had better knowledge. Regarding attitude, a high level of interest of medical students in global health was declared, and in line with this result, we found out that some of our participants thought educating students has priority compared to medical staff and most of them considered hybrid class as the best way of educating students.²⁷

TABLE 2 The participants' knowledge about health tourism.

No.	Items	Completely correct, N (%)	Incompletely correct, N (%)	Completely incorrect, N (%)	Don't know, N (%)
K1	What is/are the definition of health tourism?	72 (18.4)	119 (30.5)	146 (37.4)	45 (11.5)
K2	Which are the types of health tourism?	69 (17.6)	104 (26.6)	140 (35.8)	77 (19.7)
K3	What is/are the definition of wellness tourism?	29 (7)	61 (15.6)	212 (54.3)	88 (22)
K4	What is/are the definition of curative tourism?	43 (11)	97 (24.8)	174 (44.6)	76 (19.4)
K5	What is/are the definition of medical tourism?	69 (17.6)	117 (30)	178 (45)	26 (6)
K6	What is/are the advantage/es of health tourism?	61 (15)	113 (28.9)	166 (42.5)	50 (12)
K7	Which are top countries in health tourism industry?	41 (10.5)	69 (17.6)	213 (54.6)	67 (17.1)
K8	Which are known as Iran's health tourism poles?	70 (17.9)	264 (67.6)	-	56 (14.3)

TABLE 3 Univariable analysis of demographic information of knowledge regarding health tourism.

Variable	Knowledge out of 16			Variable	Knowledge out of 16		
	Mean ± SD	p Value	Effect size ^a		Mean ± SD	p Value	Effect size ^a
Age (years)		<0.001 ^b	0.76	Education level		<0.001 ^b	0.84
<25	4.6 ± 2.4			Associate degree	3.4 ± 2.7		
25–35	7.9 ± 0.1.9			Bachelor of Science	4.2 ± 1.9		
>35	6.1 ± 2.1			Master of science/Professional Doctorate	8.0 ± 1.8		
				Doctor of Philosophy/Medical residency	8.9 ± 2.1		
Gender		0.074 ^c	0.2	Major of study		0.091 ^c	0.1
Male	6.3 ± 1.9			Clinical-based majors	5.9 ± 1.7		
Female	5.9 ± 2.3			Nonclinical majors	6.3 ± 2.0		
Marital status		0.062 ^c	0.19	Having a job experience		<0.001 ^c	0.81
Single	5.7 ± 2.1			Yes	8.7 ± 1.8		
Married	6.1 ± 2.3			No	3.8 ± 2.3		
Ethnicity		<0.001 ^b	0.67	Having experience of a health tourism- related job		<0.001 ^c	0.74
Fars	9.8 ± 2.1			Yes	10.2 ± 1.9		
Turk	6.9 ± 2.5			No	2.8 ± 2.3		
Lor	5.4 ± 1.7			Having ever participated in health tourism courses		<0.001 ^c	0.65
Kurd	4.9 ± 2.3			Yes	7.8 ± 2.1		
Other	3.8 ± 1.9			No	3.9 ± 2.5		
Living area		<0.096 ^c	0.1	Geographical region of province of residence		<0.001 ^b	0.64
Urban area	6.8 ± 1.7			North	5.8 ± 2.0		
Rural area	6.1 ± 2.6			South	6.9 ± 2.4		
				Central	8.1 ± 1.9		
				East	5.7 ± 2.1		
				West	4.8 ± 1.7		

Note: Bold values are statically significant.

^aCohen's *F* effect size.

^bOne-way ANOVA test.

^cIndependent sample *T*-test.

TABLE 4 Attitudes of participants toward health tourism.

No.	Item	Strongly agree, N (%)	Agree, N (%)	Neither agree nor disagree, N (%)	Disagree, N (%)	Strongly disagree, N (%)
A1	You think that the health tourism industry should be recognized and developed as a growing industry in Iran	101 (25.8)	163 (41.7)	112 (28.7)	14 (3.5)	-
A2	You think that health tourism will not have harmful effects on culture and society of destination country	29 (7.4)	49 (12.5)	211 (54.1)	78 (20)	23 (5.8)
A3	You think that Iran has the ability to grow and compete with other countries in the field of health tourism	23 (5.8)	63 (16.1)	58 (14.8)	192 (49.2)	54 (13.8)
A4	You think that Iran has good tourist attractions to attract health tourists	38 (9.7)	259 (66.4)	-	80 (20.5)	13 (3.3)
A5	You think that Iran has the appropriate medical equipment and technology to attract health tourists	76 (19.4)	128 (32.8)	25 (6.4)	114 (29.2)	47 (12)
A6	You think that to provide medical services to international patients, private hospitals are a better option than public hospitals	37 (9.4)	233 (59.7)	31 (7.9)	89 (22.8)	-
A7	You think that medical professionals in Iran are skillful and trustworthy people	99 (25.3)	185 (47.4)	-	71 (18.2)	35 (8.9)
A8	You think that health tourism will improve the level of medical knowledge of medical professionals	15 (3.8)	70 (17.9)	194 (49.7)	89 (22.8)	22 (5.6)
A9	You think that all employees involved in health tourism must attend the necessary training courses to work in this field	62 (15.8)	148 (37.9)	103 (26.4)	62 (15.8)	15 (3.8)
A10	Raising awareness about health tourism to medical sciences students is more important and effective than graduates and medical professionals	17 (4.3)	74 (18.9)	203 (52)	81 (20.7)	15 (3.8)
A11	Raising awareness about health tourism to students of general medicine is not more important and effective than students of other medical sciences majors	23 (5.8)	116 (29.7)	175 (44.8)	71 (18.2)	5 (1.2)

Moreover, student's age between 25 and 35 are reported to have higher knowledge in our study, which may be the result of having a higher level of education. Also, living in the central parts of Iran and having Fars ethnicity, were associated with higher knowledge among the participants, which may be rooted in the existence of higher opportunity of various education opportunities in the metropolises which are mostly located in the center of the country. Also, relatively all education in Iran are in Farsi language, which may contribute to higher knowledge among Farsi-spoken and Fars ethnicity participants.

Another finding in our study demonstrated that having job experience of participants contributed to their better knowledge, which is similarly emphasized in a paper by Zhong et al. indicating that knowledge of medical procedures, treatments, and wellness programs is essential for a career in the health tourism industry.²⁸

A study by Rahma et al., which assessed medical and health science students' knowledge, attitudes, and perception regarding

pharmacogenomics industry in the United Arab Emirates, revealed that only a negligible amount of participants responded correctly to the knowledge questions, while this amount in our study was higher but still indicating poor level of knowledge regarding this industry among students. Moreover, similar to our results, there were significant differences in the levels of knowledge by the level of education of students, the completion status of training or education about this industry, and the completion of an internship or related job.²⁹

In addition, according to our study, less than half students knew about the benefits of this industry, which is important for them to be aware of these benefits and understand the potential impact of health tourism on individuals, communities, and economies. In this regard, a research by Malik et al. mentioned that raising awareness about the benefits of medical tourism can help improve students' attitude toward this field, which can be

done through seminars, workshops, and guest lectures by experts in the field.²⁷

Also, while a small number had knowledge about the top countries in this industry, most of them knew the top cities of Iran in this regard, indicating a need for improving their knowledge regarding this industry, especially at the international level.

In our study, the participants' attitudes were almost positive toward the health tourism industry, while a study by Park Eunyoung and Mun Wonsuk³⁰ showed that attitudes of health sciences students of Korean colleges were not optimum, especially compared to students in tourism field. Moreover, a study conducted by Reddy et al.³¹ which used the theory of planned behavior to investigate the medical tourism beliefs of undergraduate students found that students did not have positive intentions to seek more information about medical tourism; this was in contrast with our finding. Also, a research by Boguszewicz-Kreft et al. conducted on American students found that they had an ambivalent attitude toward medical tourism, that is, a lack of either a positive intention or strong aversion.³²

Similar to our results, a study by Rajeev et al.³³ studied the knowledge, attitude, and experiences of the students regarding medical tourism in South India. The results showed that the majority of the respondents had a positive attitude toward medical tourism, and they believed that it could improve the quality of healthcare. Also, knowledge of non-Indian students was reported to be higher than other people there.

Our study showed that over half of the participants did not have any idea about whether health tourism might have harmful effects on the culture and society of the destination country or not, which can be the result of lower knowledge about this industry. Of course, two studies by Zia Sheikholeslami et al.^{24,25} revealed that the majority of people believed that the development of health tourism did not have any social destructive effects, which was in contrast with our findings.

In contrast with this result of our study, a study by Sohail et al. found that most students viewed less developed destinations as posing a higher risk for illness acquisition, and that such perceptions were influenced by students' knowledge of travel health risks, prior experience of significant travel-related illness, and levels of both travel experience and familiarity with their destination.³⁴

Similarly, based on a study by Boguszewicz-Kreft et al., perceived risk was found to have a very strong negative impact on attitude toward medical tourism, meaning that the higher the perceived risk, the less favorable the attitude toward medical tourism.³² In line with this result, a paper by Zhong et al. indicated that keeping students informed about current issues and trends in health tourism, such as the impact of infectious diseases and public health crises on the industry, can help them develop a well-rounded understanding of the field.²⁸

Evidence showed that the Iranian medical tourism industry has good conditions in terms of competitive pricing, skilled physicians, and low waiting times compared to other countries^{35,36}; however, there is a lack of investment in other medical tourism infrastructures, and the necessary technology and technical infrastructure for the development of medical tourism are not fully provided.^{35,37} In this

regard, our study showed that unfortunately, most of participants believed that Iran does not have the ability to grow and compete with other countries in the field of health tourism.

However, there is a perception that Iran does not have the appropriate medical equipment and technology to support this industry. Iran has a lot of potential for health tourism due to its many natural resources with therapeutic properties and it is becoming an increasingly popular destination for medical tourism, with many people from around the world traveling to Iran for medical treatment. In line with that, results of our study demonstrated that most participants thought that Iran has good tourist attractions and to attract health tourists and mostly believed that Iran has the appropriate medical equipment and technology for being developed in this industry.

Almost three-fourths of students in our study believed that medical professionals in Iran were skillful and trustworthy people; this was similarly claimed in two studies by Zia Sheikholeslami et al.^{24,25} Moreover, in our study, high quality and low price of services, positive international image of the destination country, and the ability to treat a specific type of disease were the most important factors in attracting foreign patients from the student's point of view, which was reported in two studies by Zia Sheikholeslami et al.^{24,25}

A study by Hamzehpour et al. mentioned that health tourism involves attracting patients from other countries to seek medical treatment in Iran which his influx of patients from diverse backgrounds can expose Iranian medical professionals to a wider range of medical conditions, treatment approaches, and cultural perspectives. Interacting with international patients can broaden their knowledge and understanding of different healthcare practices.³⁸ In this regard, our study revealed that almost half of the subjects did not have any idea about whether the development of health tourism could lead to the improvement of the level of medical knowledge of medical professionals or not, while the studies carried out by Zia Sheikholeslami et al.^{24,25} demonstrated that the majority of participants believed that the entry of health tourists might cause the development of Iranian physicians' knowledge. Regarding this attitude, a literature review on health tourism by Zhong et al. revealed that the rise of medical-health-wellness tourism emphasizes the privatization of healthcare, an increasing dependence on technology, and the accelerating globalization of healthcare and tourism.²⁸ If managed successfully, this form of tourism can be a force for good in terms of fostering the economic development of countries delivering these services. Additionally, medical tourism may contribute to the generation of sustainable development if along its entire service chain the three pillars of sustainable tourism development are considered.

Investing in staff training gives medical tourism businesses a competitive edge in the market. Highly skilled and well-trained staff can provide quality services, enhance patient satisfaction, and contribute to the success of the medical travel program. Also, by training employees to be culturally sensitive, medical travel businesses can better meet the diverse needs of their patients. Moreover evidence showed that higher knowledge of medical procedures, treatments, and wellness programs is

essential for a career in the health tourism industry.⁶ In this regard, the majority of our participants thought that all employees involved in health tourism industry must attend the necessary training courses to work in this field.

According to our study, most participants thought that private hospitals were better medical service providers than public hospitals for international patients; this is in the same line with the results of a study by Zia Sheikholeslami et al. in Rafsanjan, Iran,²⁵ showing that the majority of the participants had a better attitude toward private setting in this subject; however, another study by Zia Sheikholeslami et al.²⁴ demonstrated that only one-third of the respondents in Qom considered private hospitals a more suitable place for offering health tourism services.

In our research, half of the participants did not have any idea about raising awareness about health tourism was more important among a special group of medical sciences students or professionals; this was in contrast with the findings of a study by Zia Sheikholeslami et al.,²⁵ showing that people agreed with the idea that all medical sciences professionals should be involved in this industry. Also, contrary to our results, a research by White and Cauley, demonstrated that raising awareness about health tourism to both medical sciences students and graduates/medical professionals is important to ensure that they are informed about the potential benefits and risks of medical tourism.⁸

Also, our study showed that relatively half students did not have any idea about raising awareness about health tourism was more important among a special group of medical students or medical sciences students.

Furthermore, the ability to communicate with others easily and effectively, as a necessary personal feature in health tourism industry, was reported by over half of the respondents, while unfortunately almost three-fourths of them were not completely fluent in even one most-spoken language which is very vital in attracting and communicating with foreign patients in this industry, which calls for serious actions to improve the students' potentials.

4.1 | Strengths, limitations, and recommendations

Until now, a number of studies have been conducted about medical tourism in Iran; while most of them assessed development of national medical tourism at the city or provincial level and a small number of them explored medical staff's knowledge and attitudes regarding this industry at the city level, as a strength point, our research target was medical sciences students of the universities of the whole country.

As a limitation of this study, we had to use an online questionnaire platform to reach students of medical universities of all over the Iran. Therefore, those who did not have access to the Internet or smartphones might be missed from participating in the study. Therefore, the current online research may not be representative of the overall population.

However, the high number of questions and the small smartphone screen may have posed challenges to participants, the

participation rate was relatively high, and our desired sample size was met in a short time.

We recommend to design educational interventions in the future studies and also surveying medical organizations to assess the readiness of Iran in this industry to provide more pieces of evidence, which can be highly beneficial for policymakers and stakeholders when designing national and provincial protocols regarding health tourism industry.

5 | CONCLUSION

In summary, students' knowledge about health tourism industry was not optimum; however, their attitudes were almost positive. Therefore, this study emphasized the need for implementing a variety of interventional programs by policymakers, especially educational ones, about health tourism for all medical sciences students and even after their graduation.

AUTHOR CONTRIBUTIONS

Fatemeh Shaygani: Conceptualization; data curation; formal analysis; project administration; software; writing—original draft; writing—review & editing. **Milad Ahmadi Marzaleh:** Conceptualization; data curation; formal analysis; methodology; project administration; writing—original draft; writing—review & editing. **Zahra Gheibi:** Conceptualization; data curation; software; validation; writing—original draft; writing—review & editing.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The authors confirm that the data supporting the findings of this study are available within the article and its supplementary materials.

TRANSPARENCY STATEMENT

The lead author Milad Ahmadi Marzaleh affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

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