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Exploring the Medical Tourism Development Barriers and Participation Willingness in Taiwan: An Example of Mainland Tourist

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Abstract**—**Medical Tourism is a new development in Taiwan recently. The willingness and barriers of potential tourists from China to participate medical tourism are studied. A questionnaire survey is conducted and the SPSS software is used to analyze data. The results show that under one fifth of respondents express full medical tourism participation willingness. Among travel barriers toward medical tourism, "insufficient information of medical tourism trip", "not enough time", "no companion", "worrying about unsatisfied itinerary." are perceived the most important barriers.

Keyword**—**medical tourism, travel barriers, participation willingness

I. Introduction

IN recent years, medical tourism has become a new trend globally and is especially flourishing in Europe, South Africa, and India. In Asia-pacific areas such as Singapore, Malaysia, and Thailand, the increasing number of medical tourists is also observed. Due to the new trends of long-distance travels, the medical-related activities have been developed to assist tourists in enjoying their vacations; consequently, medical tourism has become a speedily growing industry. The basic reasons explored include the high medical prices in developed countries all over the world and the long-time waiting for the non-emergency medical surgical operations. In addition, patients' financial capability to afford international traveling fee, concessional economic exchange rate, and public preferences on travel also lead to the dramatic development of medical tourism [1]; [2]; [3]. Since the majority of people prefer long-distance travels for better remedying in the visiting countries with new medical technologies, developing countries have become the benefit-gainers from the emerging tourism industry.

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In the context of rapid growth in medical tourism on the global scale and increasing medical demands worldwide, Taiwan is considered to have high potential for development due to high-quality medical technologies. Therefore, if Taiwan's tourism resources can be fully made use of and the features of medical technology are sufficiently realized, the local tourism resources would be definitely better combined with the advantages of medical technology to promote service industry sectors and achieve substantial benefits. The population of this study is Mainland tourists to explore medical tourism travel barriers and travel intention.

According to the above description, this study aims to explore participation willingness toward Taiwan medical tourism and the relationships between tourist characteristics and participation willingness. In detail, the main purposes of this study are as follows:

(1)Understanding medical tourism travel barriers and participation willingness of Mainland tourists toward Taiwan medical tourism.

(2) Exploring the relationships of different socio-economic backgrounds of Mainland tourists and their participation willingness.

(3) Exploring the relationships between Mainland tourists' medical tourism travel barriers and participation willingness.

II. Literature Review

A. Medical tourism

According to the definition of the World Tourism Organization (WTO), the main service themes of medical tourism include medical care for sickness and health, and rehabilitation. As such, customers' primary purpose on travelling is to consume advanced health care services in other countries or regions. Early concepts of medical tourism refer to a variety of sightseeing activities to maintain healthiness. Up to the present with modern and continuously progressing medical technologies, there has been a rising trend that people use other foreign countries' advanced medical technologies to pursue good health simultaneously with achieving the sense of leisure; hence, the scope of medical tourism gradually expands and cosmetic surgery, SPA, and other therapies have been also included [4]. Figure 1 classifies the general medical tourism into three main dimensions of medical tourism, healthcare tourism, and wellness tourism [5]. Accordingly, medical tourism and healthcare tourism refers to the modes of travelling in which the clients aim to pursue common medical treatments and health care services in other countries or regions.

Specifically, medical tourism includes health check, plastic surgery, eye surgery, and cancer treatment while the main themes of tourism services in healthcare tourism consist of physiotherapy, hemodialysis, long-stay, spa, and aromatherapy. Finally, wellness tourism is referred as recreational tourism which includes the leisure, entertainment and educational activities away from work and family interference as well as the use of designed tourism products and services to help tourists maintain and improve health conditions (e.g. ecotourism, rural tourism).

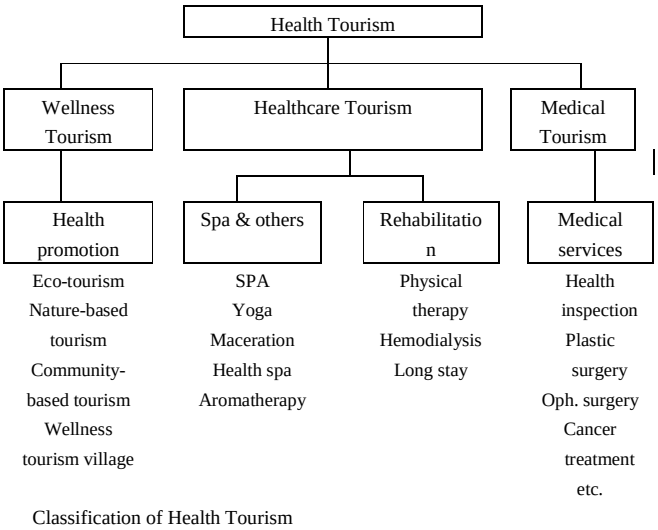

Fig. 1 General Medical Tourism Classification

B. Medical tourism development situations in several countries

There has been a rapidly emerging wave of medical tourism around the world, especially the combination of medical-related activities and tourism to promote the attractiveness of the nearby attractions. In addition to well-known Korea anaplastic technology, Singapore, Malaysia, Thailand, India have recently focused on the potential markets of Europe, America, and the Middle East tourists.

In these countries, the medical-related activities are combined with the local tourism industries. For example, in order to promote medical tourism, the Singapore Tourism Board and the Raffles medical groups have designed airport transport systems and hotel arrangements as well as assistance in local tourism itinerary for accompanied relatives, accessible links between medical tourism sites with international medical care, medical treatment visa, and accommodation instructions.

In addition, the Malaysia government has integrated hotels and hospitals in Penang to build up the "City of cosmetics", which has successfully attracted up to ten million tourists to this new kind of medical tourists from the originally small number of 70,000 people. Other example is from Thailand, the country with well-known disvolution and plastic surgery [6]. After the advent of December 2004 tsunami, the Phuket Hospital and nearby hotels have proactively cooperated to provide a suite of services with special emphasis on cosmetology surgery, being closely combined with cross-industry to solicit and complete the medical tour planning with the travel agencies to improve its competitiveness; hence, the local medical tourism industry was awakened and has strongly recovered.

South Korea, in order to achieve the goals of full development of the medical industry, has put great efforts in training health care professionals and translators and improving hotel medical equipment's standards as well as transport, accommodation and sightseeing destinations through efficient hardware and software. Regarding India, the advantages of medical tourism is from low price of curing heart disease, taking plastic surgery, joint replacement, cancer treatment and dental surgery. Particularly, the medical price in India is 70% cheaper than that in Western countries and 30% to 40% in Singapore and Thailand. Therefore, medical tourism tourists are often attracted by India's well-known tourist characteristics such as yoga, astrology, meditation in addition to temples, church, etc. [6].

Following the trend, the Hong Kong Medical Association has proposed to the Government to promote medical tourism in order to attract more tourists to Hong Kong for medical treatment, which in turn bring more jobs to help domestic doctors. It is also noted that the medical tourism is growing rapidly in South Africa and most patients are from the United States since the costs for taking plastic surgery is less than half compared with other countries. Facing the global trend, the Saudi Arabia in the Middle East is also trying to compete technically through integrating health and tourism industries, especially combining the dental and plastic surgery with pilgrimage tourism.

C. Medical tourism development status in Taiwan

Concerning the tourism industry, the main sources are still perceived from Japan, followed by Hong Kong and Macao. Meanwhile, the sources for Taiwan medical tourism development are from health care systems including dental care, foot bath, medication, hot springs, and other products. According to the recommendation by the Department of Health, the supply systems of domestic medical tourism mainly focus on tour agencies' activities in handling foreign tourists. Recently, the Department of Health has provided public and private hospitals with list prices, products, services, and other relevant information in order to assist the travel agents in selecting partners for the packaged travels. Hence, in order to seize the medical tourism market, the Taiwan Medical Tourism Development Association (TMTDA) was established in 2008 with the main aims of coordinating government authorities and hospitals to promote medical tourism development plans, integrate industry professionals, and strive to provide international medical services business opportunities.

1) Government authorities

Taiwan's government authorities have actively conducted many programs to promote medical tourism, for instance, the

Tourism Bureau has set up a health tourism promotion group and studied the cases of outsourcing strategies in medical tourism in order to assist the government in not only setting suitable policy directions but also being committed to the goal of promoting Taiwan's medical tourism on an international scale. Accordingly, the Service Industry Promotion Center of Taiwan External Trade Development Council (TAITRA) was established in 2006 with two main focuses of medical tourism and health care. In practice, in order to encourage international business tourists during their stay in Taiwan, health care providers have proactively offer health checks and health care experience. On the process of internationalization of the medical services, the Department of Health has conducted the initial stage of selecting the target markets of Chinese language-based, Japanese language-based, and English-based countries, and oversea Chinese population is considered the primary objects. In order to create the typical characteristics for Taiwan medical tourism, five major medical projects have been placed at main focuses for promotion, namely (1) seek volunteer donor for liver transplants, (2) craniofacial reconstructive surgery, (3) cardiovascular interventional therapy and surgery, (4) artificial reproductive technologies, and (5) joint replacement surgery. In addition, the Ministry of Foreign Affairs has issued the visas concerning medical items to assist the Department of Health and multinational insurer contacts. Financial Supervisory Commission also assists the communication between Department of Health and cross-insurance industry.

2) Hospitals and clinics

The development of Taiwan's medical tourism is currently in the initial stage with the establishment of the sightseeing medical institutions such as Kenting Heng-wei VIA hospital. Since the new open of the Heng-wei VIA clinic at Kenting Howard Hotel in 2005, it has been considered the first health protection-travel clinic operated by the government. Through operational style of combining different industries and the Hengchun Tourism Hospital in offering medical technologies, the VIA biomedicine is sufficiently provided with medical equipment, and the Howard Hotel provide a 660 square meter field at first floor for medical tourism. Hence, this is the first organization that concurrently offers medicine and travel services. Recently, the Formosa Plastics Group has also proactively sought new consuming product markets. Specifically, the Formosa Biomedicine Technology has combined the resources of Chang Gung Memorial Hospital and Chang Gung University and successfully creates a professional image of medical cosmetology. In order to lead the competition in the markets of medical tourism industry, Formosa Plastics Group has made more efforts in integrating the Chang Gung Memorial Hospital and alternative resources to launch package medical tourism itineraries. Moreover, the Eonway Health Maintenance Center in West Garden Hospital has latched down top demands of foreign customers in the pyramid to provide spa, swimming pool, fitness equipment, and a 120 people-capacity concert hall. The hospital is setting up on-site services in order to serve foreign and oversea Chinese tourists for healthcare treatment and health examination and to deal the language-related contacts and services. Keelung Hospital, with topographical advantages of being nearby Keelung port, signs the contract with Star Cruise and Yang Ming Marine Transport to hold international medical tourism clinic for giving various treatment for travelers. Wan Fang Hospital associates with the Grand Hotel and the Dragon Travel agent to launch health examination packages and establish international outpatient services in the hospital. As such, foreign tourists can join medical tourism packages to Wan Fang Hospital. The main tourists are from South-east Asia, Japan, and America. Other example is of the Min-sheng health care center which firstly establishes the international medical service center which integrates hospital resources and staffs proficient in foreign languages, aiming to provide 24-hour services for international patients and build international medical service moded. Changhua Show Chwan Hospital has further launched medical travel which not only provides medical treatment services, an exclusive high-level health club, and medical cosmetology but also combines medical hospitals and hotel systems. Accordingly, the staffs serving in the hospital have received relevant hotel training and are asked to possess good attitude and high service quality. Similarly, the E-DA Hospital hopes to combine medical issues and travel with the purpose of providing not only medical travel services but also fully-equipped amusement facilities. Particularly, they have recently planned to build gondola engineering for providing conveniences to future travelers to the E-DA world. Through the strategic association of ARC (Asia Renal Care) and Yan Chai Hospital (i.e. dialysis tourism group), the first tourism group for dialysis and travel in Taiwan is from Singapore. During the patients' four-hour dialysis process, their accompanied relatives can visit Lung-Shan temple and Huashi Street Night market. This really gains two advantages within a single move.

D. Travel barrier and participation willingness

1) Travel barriers

Suggesting that it should be from the perspective of social psychology to explain the inhibition power of the internal and external environment on individual's behaviors [7]. Concerning the definition of travel barriers, the leisure barriers refer to the suppression of influential factors toward individuals' participation for leisure activities regarding the length of participation time and degree of satisfaction [8].Since barrier toward participation in tourism activities is considered one of the main factors, this factor would definitely exert a negative impact on tourism on the whole. Therefore, if the barriers to individuals' continuous participation in tourism cannot be overcome, individuals would obviously not be able to fully participate in the tourism activities [9].

2) Participation willingness

Willingness is a driven force which provides a desire tendency and motivates individuals to engage in activities to reach their future goals, which in turn guide individuals' behaviors in order to achieve the objectives [10]. In the academic term, the original Chinese character of "participation" means not only the engagement of participants in an activity but also one level deeper, referred as involvement [11].

Therefore, "willingness" is referred as the voluntary nature of inner intention that cause individuals' eager attitude to participate in the activities in order to achieve the desired goals.

In sum, extant literature has widely mentioned various kinds of travel barriers. Depending on different research purposes and regions, the travel barriers would be different. However, missing from literature is the investigation of travel barriers in the medical tourism.

III. Methodology

The survey questionnaire was used in this study. The measurement items for tourism barriers were developed from [12]. Accordingly, 17 items were used to measure tourism barriers using 5-point Likert-type scale (1=strongly disagree, 5=strongly agree). The higher score shows the higher tourism barriers. Simultaneously, this study investigated respondents who had been engaged in medical tourism experience in order to explore their future participation willingness. The population for this study was Mainland tourists. The random sampling method was conducted with domestic tour agents to collect data. As a result, a total of 344 valid questionnaires were returned.

This study utilized SPSS 12.0 to analyze the data. Pearson correlation coefficient was employed to analyze the relationships in between medical tourism travel barriers and participation willingness. One-way ANOVA and t-test were used to analyze two-sample t-test of socio-economic background and medical tourist willingness.

IV. Data analysis and disscussions

A. Socio-economic background analysis

This study includes 7 items of personal socio-economic background which are (1) gender, (2) age, (3) education background, (4) occupation, (5) marital status, (6) personal average monthly income, and (7) place of residence. Out of 344 respondents, 185 were females. The majority of participants ranged in age from 30 to 39 (102 persons), had graduate of college educational background (192 persons). Concerning occupations, 93 participants engaged in service industry. 169 respondents were married and had children. While over 50% of the respondents indicated their income in between 1000 and 5000 RMB, 85 respondents reported their personal income is from 3001 to 5000 RMB (25.4%) and 78 participants confirmed their personal income of 1001-3000 RMB. The participants were mainly from Fukien and Jiangsu provinces (69 persons).

B. Medical travel experience and participation willingness

Three items were used to measure Mainland tourists' medical tourism travel experience and participation willingness. A majority of respondents (313 persons - 91.8%) indicated no experience of engaging in medical tourism. Other respondents with medical tourism travel experience when being asked about "the place they visit and engage in medical tourism recently" crossed China (13 persons - 46.4%) and selected Taiwan (8 persons - 28.6%). Concerning future participation willingness toward medical tourism, 15 respondents (6.3%) showed strong participation willingness, 32 respondents (13.4%) indicated their willingness to participate in this tour, and 46 respondents (19.2%) expressed no willingness to join medical tour. The details are as follows:

TABLE I
Frequency of Medical Tourism Experience and Future Participation Willingness

		Frequency	Percentage
Whether have medical tourism experience	Yes	28	8.2
	No	313	91.8
The place they visit and engage in medical tourism recently	China	13	46.4
	Taiwan	8	28.6
	Other country in Asia	3	10.7
	America	1	3.6
	Europe	3	10.7
Participation willingness	Totally not intention	46	19.2
	A bit intention	75	31.4
	No idea	71	29.7
	Willing intention	32	13.4
	Strong intention	15	6.3

C. Medical Tourism Travel Barriers

17 items were used to measure travel barriers. The purpose of this measurement was to test the degree of perceived travel barriers of potential Mainland tourist on engaging in medical tourism. The higher score showed the higher degree of travel barriers. The results show that the main barrier is the "lack of medical tourism information" (M=3.69). The second travel barrier is "bad experience in the past" (M=3.46), followed by "not enough time" (M=3.28). Other higher mean values of travel barriers are of "worry about the unsatisfied itinerary" (M=3.22), "financial problem" (M=3.20). The lower mean values of travel barrier is of "worry about not suiting with other participants" (M=2.85) and "unsuitable health condition" (M=2.85). The mean values of all medical tourism travel barriers are presented in Table II.

TABLE II
The Mean Values of Medical Tourism Barrier

Travel Barriers	Mean [a]	Standard Deviation
Not enough interest	3.09	1.026
Unsuitable health condition	2.86	1.045
Security concerns	3.14	1.004
Bad experience in the past [b]	3.46	1.097
No companion	3.23	.956
Disagreement from family members or friends	2.99	.989
Worry about not suiting with other participants	2.85	1.000
Transportation inconvenience	3.04	1.031

Worry about unsatisfied itinerary	3.22	1.044
Worry about unsuitable weather conditions	3.14	1.103
Lack of recreation resources in medical tourism areas	3.04	1.014
Badly-equipped facilities	2.93	.971
No chance for travel due to work loading	3.19	1.069
No chance for travel due to family responsibilities	3.19	1.045
Not enough time	3.28	1.030
Financial problems	3.20	1.031
Lack of medical tourism information	3.69	.956

Note: a Measurement scale: 1= strongly disagree, 2=disagree, 3= no idea, 4=agree, 5=strongly agree
b The item only responses by the one has medical travel experience

D. The Relationships between Specific Tourist Characteristics and Medical Tourism Participation Willingness

Table III shows the relationships between specific tourist characteristics and medical tourism participation willingness. This study finds that there are significant differences concerning medical tourism participation willingness among respondents of various occupations. Specifically, the participation willingness of respondents belong to agriculture, forestry, fishery, and commercial industries (2.84) are higher than that of military/government employees and freelancers (2.40) and of housekeepers, students, and unemployed people (2.21) (F=2.788). Personal average monthly income also affects participation willingness. The findings show that personal income of under 3000RMB results in the lowest participation willingness of 2.30. The second lowest travel belongs to respondents of 3001-5000 RMB (2.40). The respondents of monthly 5000-7000 RMB income express the highest participation willingness (2.87), followed by respondents of above 7001 RMB (2.42). Other socio-economic background did not affect medical tourism intention.

TABLE III
RELATIONSHIPS BETWEEN TOURISTS' SPECIFIC CHARACTERISTICS AND MEDICAL TOURISM PARTICIPATION WILLINGNESS

Socio-economic background		participation willingness	t/F value	Sig. (2-tailed)
Gender	Male	2.66	1.278	.203
	Female	2.47		
Age	18-29	2.66	.207	.892
	30-39	2.54		
	40-49	2.52		
	50 and above	2.50		
Educational background	Junior high school and under	2.44	.721	.540
	Senior high school	2.40		
	College	2.55		
	Graduate school and above	2.80		
Occupation	Agriculture, forestry, fishery, commercial industries	2.84	2.788	.041*
	Service sectors	2.55		(1>3, 1>4)
	Military/government employees and freelancers	2.40		
	Housekeepers, students, unemployed people	2.21		
Family status	Single	2.49	.393	.675
	Married but no child	2.68		
	Married and have children	2.55		
Average monthly income	Under 3000 RMB	2.30	3.657	.013* (1<3, 1<4, 2<3)
	3001~5000 RMB	2.40		
	5001~7000 RMB	2.87		
	Above 7001RMB	2.42		
Place of residence	Fujian, Zhejiang, Guangdong	2.53	1.442	.232
	Jiangsu	2.77		
	Hebei, Tianjin, Beijing	3.04		
	Others	2.64		

E. The Relationship between Medical Tourism Travel Barriers and Participation Willingness

Previous studies have shown that tourism barriers are critical factors affecting tourists' willingness of attending the activities. This study adopts Pearson correlation coefficient to analyze the s between travel barriers and participation willingness and examine the relationships between respondents' perceived travel barriers and participation willingness. Accordingly, the results from Table IV present the most important medical tourism travel barrier is "not enough interest". Therefore, the lower interest shows lower willingness (Sig.=0.000). Results for other factors are as follows: "disagreement from family members or friends" (Sig.=0.001), "worry about not suiting with other participants" (Sig.=0.004). There are also subjective factors, indicating that tourism barriers are also limited by external environment such as "not enough time" (Sig.=0.008), "no companion" (Sig.=0.023), "no chance for travel due to family responsibilities" (Sig.=0.025), and "financial problems" (Sig.=0.035).

TABLE IV
RELATIONSHIPS BETWEEN MEDICAL TOURISM TRAVEL BARRIERS AND PARTICIPATION WILLINGNESS

Items	Pearson Correlation	Sig. (2-tailed)
Not enough interest	-.320	.000**
Unsuitable health condition	-.130	.045*
Security concerns	-.142	.032*
Bad experience in the past	-.203	.250
No companion	-.148	.023*
Disagreement from family members or friends	-.216	.001**
Worry about not suiting with other participants	-.086	.004**
Transportation inconvenience	-.086	.186
Worry about unsatisfied itinerary	-.088	.181
Worry about unsuitable weather conditions	.017	.791

Lack of recreation resources in medical tourism areas	-.058	.378
Badly-equipped facilities	-.043	.512
No chance for travel due to work loading	-.107	.100
No chance for travel due to family responsibilities	-.145	.025*
Not enough time	-.173	.008**
Financial problems	-.137	.035*
Lack of medical tourism information	-.015	.813

V. Conclusions and Recommendations

This study mainly explores the impact of medical tourism travel barriers on participation willingness using potential Mainland tourists as research subjects. The results show that under one fifth of respondents express full medical tourism participation willingness. Among various tourist characteristics, tourists belong to occupations of agriculture, forestry, fishery, and commercial industries with average monthly income between 5001 and 7000 RMB show the highest participation willingness toward medical tourism. Among travel barriers toward medical tourism, "insufficient information of medical tourism trip", "not enough time", "no companion", "worrying about unsatisfied itinerary." are perceived the most important barriers. The results imply that if the Taiwan government attempts to develop the medical tourism as the main tourism goal, the aforementioned barriers should be reduced. In addition, since occupations and monthly income also affect participation willingness of potential tourists, this study suggests future studies should deeply analyze the attributes of target markets in order to build up effective developing strategies (e.g. while Mainland tourists visit Taiwan, they can participate in medical activities such as health examination and beauty treatments). The study findings also put forward that tour agents should arrange specific and interesting medical tourism itinerary based on different medical contents.

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