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A Study on Product Empowerment of Medical Tourism Using Conjoint Analysis*

컨조인트 분석을 이용한 의료관광 상품역량강화에 관한 연구

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ABSTRACT

Medical tourism involves patients intentionally leaving their home country to access non-emergency health care services abroad. Growth in the popularity of this practice has resulted in a significant amount of attention being given to it from researchers, policy-makers, and the media. Yet, there has been little effort to systematically synthesize what is known about the effects of this phenomenon and key choice factors. This study seeks to figure out, using conjoint analysis, what factors Chinese medical tourists place importance on maximizing utility when selecting their destination and propose selection attributes that can lure medical tourists to Korea.

Results showed that, of destination attributes, medical technology competitiveness proved be the most important and of lower levels, international accreditation proved to have the highest utility. This article presents the findings of valuable insights to medical institutions, travel agencies and related firms in their marketing activities.

Key Words : Medical Tourism Product, Conjoint Analysis, Chinese Medical Tourists, Empowerment

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Ⅰ. Introduction

Medical tourism refers to a new form of tourism that combines medical service and leisure and cultural activities. Since lengthy period of sojourn and expenses are involved, medical tourism is recognized to be a newly found high value-added industry. When medical tourism is facilitated, it leads to not only the development of medical institutions but also development in travel, hospitality and other related industry. This will, in turn, lead to creation of employment and new jobs. As interest in one's well being is on the increase worldwide, interest in medical tourism is also on the rise.

One of the forerunners in medical tourism industry, India, is in its booming stage and has potential for future growth and development in medical tourism industry. Annual growth rate of 30% is expected in India's medical tourism industry and by 2015, India's medical tourism sector will become a Rs. 9,500-crore industry. According to Sharma(2013), the value of medical tourism in India will go as high as $2 billion by 2012. An upstart in medical tourism industry, Korea has made changes to its medical law in 2009 and has since allowed activities in hosting foreign patients. Even though Korean medical tourism industry has made remarkable progress, there are some caveats in Korea's medical tourism system that can pose challenges to both medical tourism suppliers and consumers(Handley, 2011). In 2009, Korean government even designated medical tourism as one of new growth engine industry. Korea has emerged as a major destination for medical tourism due to government's support for promotion and worldwide popularity of Hallyu in K-pop and Korean dramas.

As quality of life has improved as a result of economic growth, spending on cosmetic care as well as health has increased. This has led to cosmetic tourism for cosmetic surgery. Due to high level of standard in Korea's cosmetic surgery and competitive price along with Hallyu fever, female medical tourists from neighboring countries of China and Japan are choosing Korea for their cosmetic surgery destination. Especially, as China is experiencing economic growth and surge in growth of upper class, people who are opting to have their medical checkups in medically advanced countries are continually on the rise. Although globalization in health care has experienced rapid growth, international standards, government oversight, or ethical and legal review on medical tourism are lacking(Gray and Cartier, 2008).

Even though Korea is considered to be a late comer in medical tourism industry, there is a need to secure a market for medical tourism. As Chinese medical tourists are expected to increase in large numbers, this study seeks to figure out, using conjoint analysis, what factors Chinese medical tourists place importance on maximizing utility when selecting their destination and propose selection attributes that can lure medical tourists to Korea. By doing so, this study can provide valuable insights to medical institutions, travel agencies and related firms in their marketing activities when attracting medical tourists.

Ⅱ. Theoretical Background

1. Concept of medical tourism and status of Korea - China medical tourism

Review on concept of medical tourism are as follows. Hall(1992) defined health tourism as a health related travel with a purpose of improving one's health. According to Eric(1996), medical tourism is a form of leisure activity to improve health condition that involves leaving one's home. Carcia-Ales(2005) defined heath tourism as leaving one's residence and traveling for the sake of one's health and also proposed reasons for its growth, restraints and strategies to overcome such restraints. World Tourism Organization (WTO, 2008) defined medical tourism as the tourism services based on healthcare and nursing, sickness and health, and recovery and rehabilitation, where medical tourism encompasses both health tourism and medical tourism.. According to Lee, Kim and Lee(2009), medical tourism encompass both meaning of medical service and tourism service but medical service has more importance. Hwang(2010) defined medical tourism as an activity that seeks to improve health as well as meaning of life through travel, recuperation and cultural activities in conjunction with medical checkups and treatments and visits to nearby tourist attractions. Based on prior definitions of medical tourism, we can redefine medical tourism as a mentally satisfying activity gained by visits to tourist attractions, recuperation, shopping as well as physical satisfaction gained by receiving high quality medical service at a low cost by visiting other country for the purpose of medical service such as health enhancement and treatment.

Today, countries like India, Indonesia, Malaysia, the Philippines, Singapore, Thailand and many other countries including Korea promote their countries as major destinations for medical tourism. Medical tourism was once promoted by individual medical institutions like Bumrungrad International Hospital and Bangkok International Hospital but is now promoted by all the stakeholders involved in medical tourism industry such as individual medical institutions, government agencies, private hospital associations, airlines, hotel chains and medical brokerages. 'Medical tourists' include patients from public health care system countries who try to avoid treatment delays and receive timely health care and also Americans who are uninsured and others who can not afford health care in their home nations(Turner, 2007).

Medical tourism is a high value-added industry and its market is experiencing average annual growth of 15%. As the level of world medical service is on a upward equalization trend and as the service trade barrier is easing, medical tourists are converging into asia. Among asian countries, Thailand, Singapore and India are battling to become the hub of asian medical tourism market. These countries enjoy the advantage of high medical service standard, cutting edge medical equipment, low cost, well endowed tourism resources, low price level and are actively hosting foreign patients. The aims of promoting medical tourism are to promote employment and to expand foreign currency income. These countries target wealthy class of China, India, Southeast asia and Middle East but are also expanding into U.S., Europe, Japan and Korean markets(Jin, 2011). Both recipient and transmitting nations in medical tourism benefit from the transaction and enhance the economic wealth of both countries involved(Piazolo and Zanca, 2011). Medical technology standard of Korea is regarded to be about 80~90% of advanced country standard. Korea's standard is at the foremost level in cardiovascular disease, certain cancers, plastic surgery and dentistry. Thus, prospects for being a medical tourism destination is promising. However, due to restrictions in law and lack of policy has made to Korea lag behind Thailand, Singapore and India thus far.

<Table 1> Inbound medical tourists

	2009	2010	2011
Increase in number of foreign patients	60,201 patients	81,789 patients (36% increase over previous year)	122,297 patients (49.5% increase over previous year)
Medical revenue from foreign patients	54.7 billion Korean won	103.2 billion Korean won (89% increase over previous year)	180.9 billion Korean won (75.3% increase over previous year)
Nationality of foreign patients	U.S.A.(32.6%), Japan(30.3%), China(11.0%), Russia(4.1%), Canada(2.3%), others(20.7%)	U.S.A.(32.4%), China(19.4%), Japan(16.8%), Russia(7.7%), Mongolia(2.8%), others(20.9%)	U.S.A.(27.0%), Japan(22.1%), China(18.9%), Russia(9.5%), Mongolia(3.2%), others(%)
Medical treatment areas	internal medicine(20.5%), checkup(13.9%), dermatology·cosmetic surgery(13.7%), family medicine(8.0%), obstetrics and gynecology(6.2%), oriental medicine(2.9%), others(29.8%)	dermatology·cosmetic surgery(14.0%), internal medicine(13.5%), checkup(13.1%), family medicine(9.8%), obstetrics and gynecology(5.6%), oriental medicine(4.1%), others(35.0%)	internal medicine (15.3%), dermatology·cosmetic surgery(12.7%), family medicine(8.7%), checkup center(8.3%), obstetrics and gynecology(7.7%), oriental medicine(5.9%), others(36.4%)
Medical treatment region	Seoul(61.3%), Gyeonggi(19.2%), Incheon(7.3%), Daegu(4.7%), Busan(4.0%), Jeonbuk(1.2%)	Seoul(61.7%), Gyeonggi(13.3%), Daegu(5.5%), Busan(5.0%), Incheon(3.5%)	Seoul(63.7%), Gyeonggi(14.0%), Busan(5.5%), Daegu(4.5%), Incheon(3.3%)

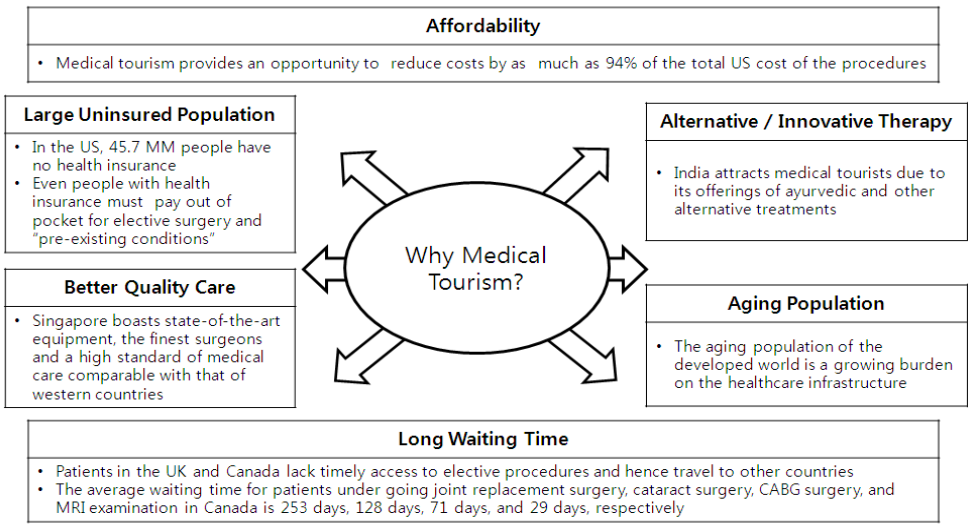
source: reconstructed from Korean Ministry of Health and Welfare(2011, 2012)

Korean government in May 2009 amended its medical law and designated medical tourism as one of its new growth engine industry. To facilitate medical tourism, Korean government has provided active support and devised Korean medical brand "Medical Korea" and slogan 'Smart Care' and also promoted the brand at the national level. In 2010, Korea has hosted 81,789 foreign patients which was exceeding the goal of 80,000 patients. In 2011, Korea hosted 122,297 patients which was a 49.5% increase over previous year. The medical revenue generated in 2010 was 103.2 billion Korean won and in 2011 it was 180.9 billion won, an increase of 75.3%. Since 1997, the Chinese government has relaxed restriction on foreign travel of its citizens and as the standard of living has become prosperous, demand for foreign travel rapidly increased. In 2005, 31 million Chinese went abroad for travel and in 2010, 54 million travelled and spent 48 billion

US dollars, an increase of 14% over previous year. According to UNWTO, it is estimated that 100 million Chinese will travel abroad making it the largest host of foreign travellers as well as world's 4th largest sender of outbound tourists in 2020.

2. Market Drivers and Ecosystem of Medical Tourism

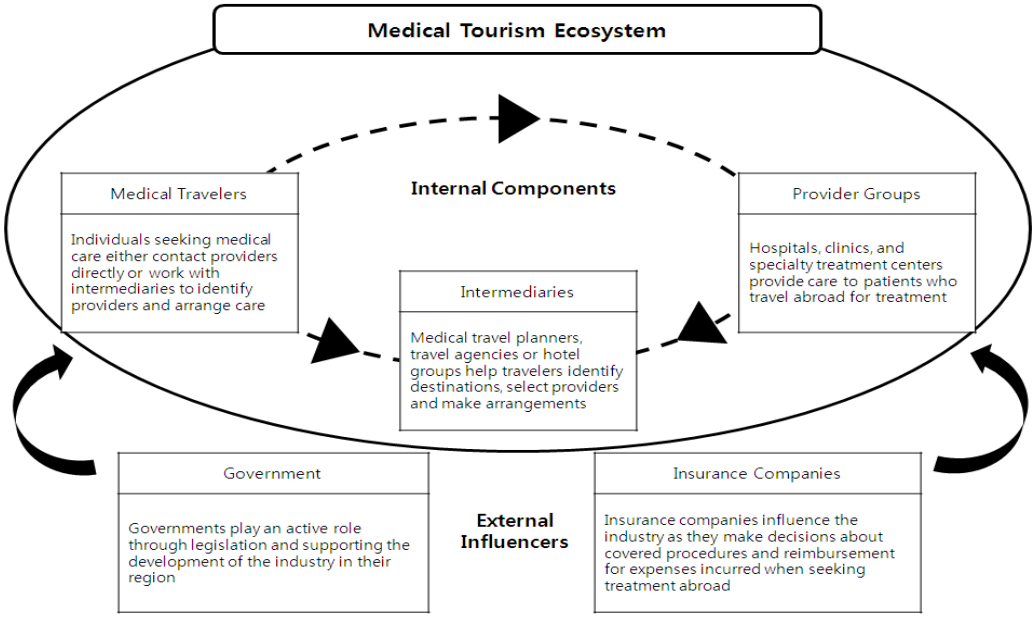
Yang(2013) constructed evaluating indicator model for medical tourism marketing. Top 5 indicators were (1) Brand positioning, (2) Healthcare facility, (3) Healthcare quality, (4) Touring spots and (5) Horizontal alliance. Rerkrujipimol and Assenov(2011) identified the strengths of Thailand's healthcare service providers but also pointed out a number of caveats that may deter the growth medical tourism. He pointed out the need for government support, a common global strategy, appropriate laws and regulation, and the ease of visa extensions procedures. More qualified specialists and staff, language and cross-cultural training, and measures to boost Thailand's country image were among issues that were identified to make Thailand even more competitive in medical tourism industry(Rerkrujipimol and Assenov, 2011). Factors that increase the attractiveness of medical tourism are shown in the Figure 1(Source: adopted from Grail Research, 2009, p.6).



〈Figure 1〉 Market Drivers of Medical Tourism

Behrmann and Smith (2010) summarizes seven leading issues concerning Canadian medical tourists including emerging technologies, particular vulnerable populations, Canadian business ties to the industry, patient populations excluded from analysis, and comparative analyses between health service providers for medical travelers(Behrmann and Smith, 2010).

Medical tourism industry can be portrayed as an ecosystem with medical travelers, intermediaries and provider groups who the internal component and are the primary source of momentum while government and insurance companies exert external influence in the system. See the Figure 2(Source: adopted from Grail Research, 2009, p.9).



〈Figure 2〉 Ecosystem of Medical Tourism

3. Attributes of medical tourism destinations

According to Horowitz and Rosensweig(2007), medical tourism is market driven. Absence of financial resources, either insurance or cash, is the primary reason for seeking medical in developing nations. In addition, needs for medical treatments that are not covered by insurance, procedures not available in their home and the need to protect privacy are met through medical

tourism. These treatments include dental reconstruction, cosmetic surgery, gender reassignment operations, or fertility treatments. Medical tourism is a convergent industry that combines both medical service industry and tourism industry. Medical tourists make their destination selection by comprehensively considering medical service environment such as medical technology level, nation's health policy, medical insurance system, medical institution facilities as well as general tourist attraction attributes. Various attributes that influence medical tourism destination are proposed. Prior studies on attributes reveal following attributes. Johnston et al.(2010)'s perspective on medical tourism from the Global North, focused on the flow of patients from affluent nations to less prosperous countries in the south. In their study, they observed that what we know about the effects of medical tourism is minimal, unreliable, geographically restricted and mostly based on speculation(Johnston et al., 2010).

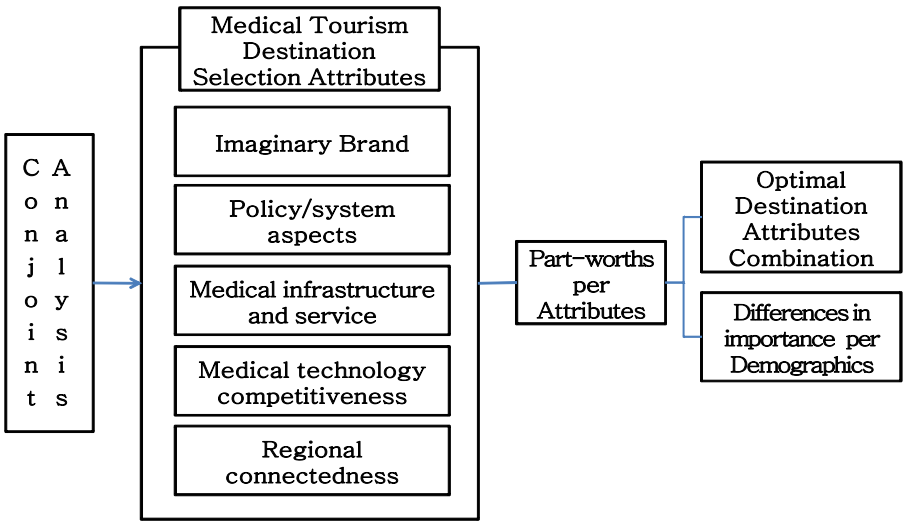
In Connel(2006)'s study, excellence of medical equipment and trust in medical personnel, differentiation in treatment cost, before and after tourism program, access to medical resources, exchange rate, travel distance, privatization of health care and increase in technical dependency on health care are mentioned as factors for radical development in medical tourism. Kang and Oh(2008) in their study, deduced 8 factors of quality of medical service, travel and treatment cost, modernization of medical facility, communication in examination, proximity and accessibility, ante and post care service, attractiveness of tourism program other than medical treatment, natural attractions and climate and food and then analyzed degree of differences in destination attributes according to demographics of nationality, gender, age, education, income and occupation.

In Kim et al.(2010)'s study, 4 functional value factors of professionalism of medical service, satisfaction of medical service, adequacy of medical service and reputation and accessibility were used to explain why patients chose Korea over other countries. Sung(2012) constructed 4 upper rank items of policy and system aspect, medical infrastructure and service, competitiveness of medical technology and regional connectedness and 18 lower rank items and then analyzed differences in priority and in persons affiliated in medical tourism industry. In this study, imaginary brands were introduced to expand variables. While patient on medical tourism can benefits from the relative low cost and high quality of the medical care, Lee(2007) emphasized that regulation and monitoring of the industry and certification of staff are needed.

Ⅲ. Research Design

1. Research model

In this study, to find out the reaction of Chinese to medical tourism, conjoint analysis, which is an useful tool to analyze consumers' utility was used. The research model for this study is shown in figure 3.



〈Figure 3〉 Research Model

5 major destination selection attributes of imaginary brand, policy and system aspect, medical infrastructure and service, medical technology competitiveness and regional connectedness were selected. In order to reveal the importance of selection attributes and utility value of medical tourism destination selection attributes, survey was conducted on convenience sample of Chinese students and Chinese foreign residents who are currently residing in Korea. Total of 200 questionnaires were distributed to universities in Gyeongnam and Busan. 117 copies were collected and after eliminating 16 surveys that were incomplete, total of 101 surveys were used for the analysis using SPSS 20.0 statistical tool.

2. Conjoint analysis

Conjoint analysis is a tool that can analyze consumers' utility and measure overall preferences for a particular product and deduce part-worths for attributes that comprise a product. Based on the preference, relative importance of each attributes can be evaluated and also predict what selection a consumer is likely to make. Each product has important attributes and each attributes can have different values(Park, 2010). Multiple well-designed imaginary product profiles are presented to consumers to make a choice. Using such tool can enable researchers to determine the relative importance of destination attributes and can be utilized by medical institutions that seek to host patients, travel agencies and related firms in their marketing activities to find out relative importance of attributes and to develop new product development strategy.

3. Selection of medical tourism destination attributes and survey design

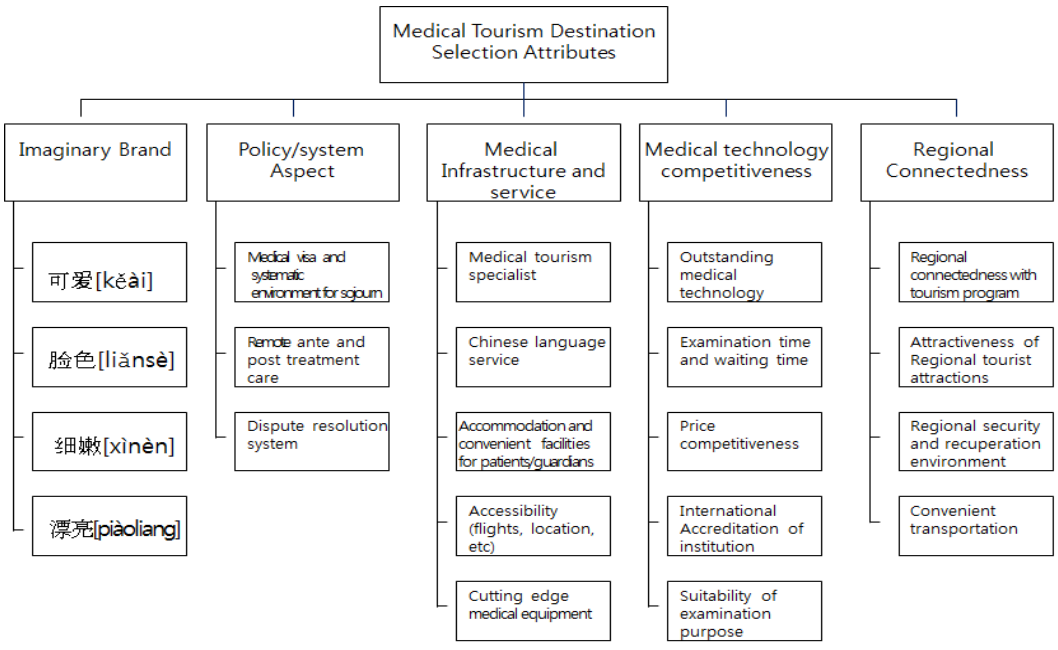
〈Table 2〉 Imaginary brand for dermatology · cosmetic surgery medical institution

Imaginary Brand	Meaning	
美麗[měilì]	beautiful, pretty	rejected
可 心[kěxīn]	satisfied	rejected
可愛[kěài]	lovable, cute	accepted
臉色[liǎnsè]	facial complexion	accepted
細嫩[xìnèn]	smooth skin	accepted
赫拉[hèlā]	attract beauty	rejected
好看[hǎokàn]	chic, radiant looks	rejected
漂亮[piàoliang]	lovely, comely	accepted

Selection attributes used in this study has been drawn after theoretical review and validated through survey conducted on people who are currently affiliated with medical tourism. Selection attributes used in Sung(2012)'s study were used with addition of imaginary brand name for dermatology and cosmetic surgery hospitals. Imaginary brand name was added because perception for exclusive brand name for hospital is lacking and to find out utility of Chinese medical tourists. 4 imaginary brands for hospitals were drawn from 8 imaginary brand through survey on

10 Chinese students in Korea.

Therefore, in this study, imaginary brand, policy and system aspect, medical infrastructure and service, medical technology competitiveness and regional connectedness were constructed as selection attributes and then 4 lower levels of imaginary brand, 3 of policy and system aspect, 5 of medical infrastructure and service, 5 of medical technology competitiveness and 4 of regional connectedness were set as lower levels. Figure 4 shows medical tourism destination selection attributes and levels. Due to a large number of attributes and levels, fractional factorial design rather than full profile method was used in this study. Since there were 5 attributes and 4 levels for imaginary brand, 3 for policy and system aspect, 5 for medical infrastructure and service, 5 for medical technology competitiveness and 4 for regional connectedness, there can be 1,200 combinations(4×3×5×5×4). Since it would be virtually impossible to propose all profiles and rank them accurately, 25 profiles were drawn through orthogonal design using SPSS to find out preferences for attributes and part worths.



<Figure 4> Selection attributes for medical tourism destination

Table 3 shows 25 partial profiles generated through orthogonal design of SPSS. Even with 25 profiles, it would be difficult to rank 25 profiles in order. Thus, in this study, BIB Test developed by professor Hiraki was used to measure preferences. The purpose of BIB Test is to reduce the number of tests. A respondents has only 10 fingers with 5 on each hand. Ranking items within the limits of 5 fingers could be the limit of respondent's ability, so in BIB Test, fewer than 5 profiles are repeatedly drawn from profiles of more than 10 to be ranked. After calculations, these rankings of 5 profiles will have the same effect as ranking of 10 or more profiles(Won and Jeong, 1999).

〈Table 3〉 List of 25 profiles

Profile ID	Imaginary Brand	Policy/system aspect	Medical Infrastructure and Service	Medical Technology Competitiveness	Regional connectedness
1	可愛[kěài]	Remote ante and post treatment care	Accessibility (flights, location, etc)	Price competitiveness	Regional connectedness of tourism program
2	可愛[kěài]	Remote ante and post treatment care	Cutting edge medical equipment	Suitability of examination purpose	Regional security and recuperation environment
3	可愛[kěài]	Dispute resolution system	Accommodation and convenient facilities for patients/guardians	Price competitiveness	Attractiveness of regional tourist attractions
4	臉色[liǎnsè]	Remote ante and post treatment care	Cutting edge medical equipment	Outstanding medical technology	Attractiveness of regional tourist attractions
5	細嫩[xìnèn]	Medical visa and systematic environment for sojourn	Cutting edge medical equipment	Examination time and waiting time	Regional connectedness of tourism program
6	細嫩[xìnèn]	Medical visa and systematic environment for sojourn	Chinese language service	International accreditation of institution	Attractiveness of regional tourist attractions
7	臉色[liǎnsè]	Medical visa and systematic environment for sojourn	Accessibility (flights, location, etc)	Suitability of examination purpose	Convenient transportation
8	臉色[liǎnsè]	Medical visa and systematic environment for sojourn	Chinese language service	Price competitiveness	Regional security and recuperation environment
9	細嫩[xìnèn]	Dispute resolution system	Accessibility (flights, location, etc)	Outstanding medical technology	Regional security and recuperation environment

Profile ID	Imaginary Brand	Policy/system aspect	Medical Infrastructure and Service	Medical Technology Competitiveness	Regional connectedness
10	可愛[kěài]	Medical visa and systematic environment for sojourn	Accessibility (flights, location, etc)	International accreditation of institution	Regional connectedness of tourism program
11	可愛[kěài]	Dispute resolution system	Cutting edge medical equipment	International accreditation of institution	Convenient transportation
12	漂亮[piàoliang]	Dispute resolution system	Chinese language service	Suitability of examination purpose	Regional connectedness of tourism program
13	可愛[kěài]	Remote ante and post treatment care	Chinese language service	Outstanding medical technology	Regional connectedness of tourism program
14	漂亮[piàoliang]	Remote ante and post treatment care	Accessibility (flights, location, etc)	Examination time and waiting time	Attractiveness of regional tourist attractions
15	漂亮[piàoliang]	Medical visa and systematic environment for sojourn	Cutting edge medical equipment	Price competitiveness	Regional connectedness of tourism program
16	細嫩[xìnèn]	Remote ante and post treatment care	Accommodation and convenient facilities for patients/guardians	Suitability of examination purpose	Regional connectedness of tourism program
17	漂亮[piàoliang]	Remote ante and post treatment care	Medical tourism specialist	International accreditation of institution	Regional security and recuperation environment
18	可愛[kěài]	Remote ante and post treatment care	Chinese language service	Examination time and waiting time	Convenient transportation
19	臉色[liǎnsè]	Dispute resolution system	Medical tourism specialist	Examination time and waiting time	Regional connectedness of tourism program
20	可愛[kěài]	Medical visa and systematic environment for sojourn	Accommodation and convenient facilities for patients/guardians	Examination time and waiting time	Regional security and recuperation environment
21	漂亮[piàoliang]	Medical visa and systematic environment for sojourn	Accommodation and convenient facilities for patients/guardians	Outstanding medical technology	Convenient transportation
22	可愛[kěài]	Medical visa and systematic environment for sojourn	Medical tourism specialist	Suitability of examination purpose	Attractiveness of regional tourist attractions
23	細嫩[xìnèn]	Remote ante and post treatment care	Medical tourism specialist	Price competitiveness	Convenient transportation
24	臉色[liǎnsè]	Remote ante and post treatment care	Accommodation and convenient facilities for patients/guardians	International accreditation of institution	Regional connectedness of tourism program
25	可愛[kěài]	Medical visa and systematic environment for sojourn	Medical tourism specialist	Outstanding medical technology	Regional connectedness of tourism program

25 partial profiles were drawn for this study, so 25 cards were made with 3 imaginary profiles included. Respondents were asked to rank and write from first to third preferences for these 3 profiles. Table 4 shows the profile arrangement for the BIB Test.

〈Table 4〉 Profile arrangement for BIB Test

Card 1	Card 2	Card 3	Card 4	Card 5
profile1	profile18	profile19	profile5	profile16
profile12	profile13	profile3	profile11	profile20
profile8	profile6	profile10	profile14	profile9
Card 6	Card 7	Card 8	Card 9	Card 10
profile21	profile5	profile17	profile7	profile8
profile4	profile1	profile2	profile21	profile24
profile18	profile22	profile23	profile18	profile16
Card 11	Card 12	Card 13	Card 14	Card 15
profile25	profile5	profile17	profile6	profile21
profile12	profile11	profile10	profile20	profile8
profile2	profile22	profile25	profile14	profile23
Card 16	Card 17	Card 18	Card 19	Card 20
profile14	profile10	profile7	profile24	profile11
profile4	profile19	profile25	profile15	profile17
profile13	profile6	profile16	profile1	profile4
Card 21	Card 22	Card 23	Card 24	Card 25
profile12	profile9	profile3	profile24	profile9
profile3	profile23	profile22	profile7	profile15
profile20	profile15	profile13	profile19	profile2

Since the respondents are likely to give greater preference for the first attribute shown on the card, the attribute order for each card was arranged as in table 5

〈Table 5〉 Arrangement of attributes for cards

Card 1-Card 5	Card 6-Card 10	Card 11-Card 15	Card 16-Card 20	Card 21-Card 25
- Imaginary Brand - Policy/system aspect - Medical Infrastructure and Service - Medical Technology Competitiveness - Regional connectedness	- Policy/system aspect - Medical Infrastructure and Service - Medical Technology Competitiveness - Regional connectedness - Imaginary Brand	- Medical Infrastructure and Service - Medical Technology Competitiveness - Regional connectedness - Imaginary Brand - Policy/system aspect	- Medical Technology Competitiveness - Regional connectedness - Imaginary Brand - Policy/system aspect - Medical Infrastructure and Service	- Regional connectedness - Imaginary Brand - Policy/system aspect - Medical Infrastructure and Service - Medical Technology Competitiveness

Ⅳ. Empirical Test

1. Demographics of sample and importance of attributes

〈Table 6〉 Sample Demographics

Category		frequency (persons)	%	Category		frequency (persons)	%
Gender	Male	47	46.5	Marital status	unmarried	99	98.0
	Female	54	53.5		married	2	2.0
	Total	101	100		Total	101	100
Age	21~30	93	92.1	Average monthly income	below 5,000 yuan	70	69.3
	31~40	7	6.9		5,000~10,000 yuan	24	23.8
	41~50	1	1.0		10,000~15,000 yuan	5	4.9
	51~60	0	0.0		15,000~20,000 yuan	0	0.0
	over 60	0	0.0		over 20,000 yuan	2	2.0
	Total	101	100		Total	101	100
Prior medical tourism experience	yes	28	27.7	Prior visit to Korea	yes	101	100
	no	73	72.3		no	0	0.0
	Total	101	100		Total	101	100
Education level	below middle school	0	0.0	Duration of stay in Korea	1~5 days	4	4.0
	middle school	3	3.0		6~10 days	2	2.0
	high school	11	10.9		11~15 days	4	4.0
	university	58	57.4		16~20 days	8	7.9
	post graduate	29	28.7		over 21 days	83	82.1
	others	0	0.0		Total	101	100
	Total	101	100	source of information on medical tourism	TV	15	14.9
Occupation	office worker	9	8.9		newspapers/magazines/books	19	18.8
	civil servant	3	3.0		medical institution website	10	9.9
	education	1	1.0		recommendation by peers	39	38.6
	researcher	4	4.0		travel agency website	1	1.0
	technician	0	0.0		Korean government office	6	5.9
	self employed	1	1.0		others	11	10.9
	student	82	81.1		Total	101	100
	others	1	1.0	total number of respondents		101	
	Total	101	100				

Demographics of sample are shown in table 6. The size of sample for this study was 101 with 54 females(53.5%) outnumbering 47 males(46.5%). 99 respondents were unmarried(98%) and respondents in their 20s comprised 92.1%. As for education level, 87 had university or post graduate education(86.1%).

〈Table 7〉 Importance of each attributes per demographics

		Importance of Attributes					Most Preferred Attribute Level				
		Imaginary Brand	Policy/system aspect	Medical Infra &Service	Medical Technology Competitiveness	Regional connectedness	Imaginary Brand	Policy/system aspect	Medical Infra & Service	Medical Technology Competitiveness	Regional connectedness
Gender	Male	21.737	15.336	22.487	23.926	16.514	漂亮 [piàoliang]	①	②	③	⑤
	Pearson's R 0.776, Kendall's Tau 0.562										
	Female	17.099	14.354	26.581	24.997	16.969	細嫩 [xìnèn]	①	②	④	⑥
	Pearson's R 0.843, Kendall's Tau 0.604										
Medical tourism experience	Yes	18.529	16.892	23.717	24.230	16.632	臉色 [liǎnsè]	①	②	③	⑥
	Pearson's R 0.781, Kendall's Tau 0.558										
	No	19.537	14,013	25.043	24.602	16.805	臉色 [liǎnsè]	①	②	④	⑤
	Pearson's R 0.776, Kendall's Tau 0.562										

① Dispute resolution system, ② Cutting edge medical equipment, ③ Price competitiveness, ④ Int'l accreditation of institution, ⑤ Attractiveness of regional tourist attractions, ⑥ Regional security and recuperation environment

70 respondents had average monthly income of less than 5,000 Chinese yuan(69.3%). Analysis according to demographics show that there are negligible differences in importance of attributes per gender and prior medical tourism experience. When importance of attributes was compared by gender, male had higher utility in medical technology competitiveness(price competitiveness) and females in medical infrastructure and service(international accreditation). In lower rank levels, males had higher utility in tourist attractions while females had higher utility in regional security and stable recuperating environment. In addition, in analysis of attribute importance according to prior medical tourism experience, showed that respondents with experience regarded medical

technology competitiveness(price competitiveness) to be of higher utility while respondents without experience regarded medical infrastructure and service(cutting edge medical equipment) to be of higher utility. Lower levels of 3 attributes imaginary brand(臉色;liǎnsè), policy and system aspect(dispute resolution system) and medical infrastructure and service(cutting edge medical equipment) were found to be of same factors among both experienced and unexperienced respondents. Experienced respondents favored price competitiveness and regional security and stable recuperation environment while unexperienced respondents favored international accreditation and regional tourist attractions.

2. Analysis of optimal combination of destination selection attributes

Factors that affect medical tourism destinations are 5 attributes of imaginary brand, policy and system aspect, medical infrastructure and service, medical technology competitiveness and regional connectedness. Pearson's R which shows the fit of conjoint analysis model was 0.795 and Kendall's tau was 0.547 which shows the model to have a reasonable fit and to be very significant at significance level of 0.000. When optimal destination selection attributes were drawn using conjoint analysis, selection attributes that had largest effect were medical technology competitiveness(24.676), medical infrastructure and service(24.499), imaginary brand(19.257), regional connectedness(16.757) and policy and system aspect(14.811) in descending order. Table 8 shows importance and part-worths of destination selection attributes.

〈Table 8〉 Importance and part-worth of destination selection attributes

Attributes	Rank	Importance	Attribute Level	Rank	Part worth
Medical Technology Competitiveness	1	24.676	International accreditation of institution	1	0.465
			Price competitiveness	2	0.434
			Suitability of examination purpose	3	0.158
			Outstanding medical technology	4	-0.434
			Examination time and waiting time	5	-0.624
Medical Infrastructure and Service	2	24.499	Cutting edge medical equipment	1	1.479
			Chinese language service	2	0.667
			Accessibility(flights, location, etc)	3	0.614
			Accommodation and convenient facilities for patients/guardians	4	-0.602
			Medical tourism specialist	5	-2.158

Attributes	Rank	Importance	Attribute Level	Rank	Part worth
Imaginary Brand	3	19.257	臉色[liǎnsè] 漂亮[piàoliang] 可愛[kěài] 細嫩[xìnèn]	1 2 3 4	0.296 0.062 -0.155 -0.203
Regional connectedness	4	16.757	Attractiveness of regional tourist attractions Regional security and recuperation environment Regional connectedness of tourism program Convenient transportation	1 2 3 4	0.386 0.297 -0.090 -0.592
Policy/system aspect	5	14.811	Dispute resolution system Remote ante and post treatment care Medical visa and systematic environment for sojourn	1 2 3	0.812 -0.397 -0.415
Pearson's R = 0.795, Kendall's Tau = 0.547					

Observations on relative importance of lower levels of 5 attributes are as follows. Of medical technology competitiveness level, international accreditation had the highest utility(0.465) but similar to price competitiveness(0.434) followed by suitability of examination purpose(0.158), outstanding medical technology(-0.434) and examination and waiting time(-0.624). Of medical infrastructure and service level, cutting edge medical equipment had the highest utility(1.479) followed by Chinese language service(0.667), accessibility(0.614), accommodation and convenient facilities for patients and guardians(-0.602) and medical tourism specialists(-2.158). Of regional connectedness level, regional tourist attractions had the highest utility(0.386) followed by regional security and stable recuperation environment(0.297), regional connectedness of tourism programs(-0.090) and convenient transportation(-0.592).

Lastly, of policy and system aspect, dispute resolution system had the highest utility(0.812) followed by remote ante and post treatment care(-0.397), medical visa and systematic environment for sojourn(-0.415).

Based on highest 5 levels drawn, optimal selection attributes for Chinese medical tourists will be an internationally accredited medical institution with a brand name of 臉色(liǎnsè) and possesses cutting edge medical equipment. This institution should have affiliation with travel agency or medical tourism marketing firms that have developed a travel package that takes in to

account regional tourist attractions and also a support of government that can implement a system that can provide environment for a amicable settlement of medical disputes.

Compared to Sung(2012)'s study that presented selection attributes of medical tourism destinations, there are stark differences in this study. In Sung(2012)'s study, analytic hierarchy process(AHP) tool was used on specialists who are affiliated with medical tourism and who also has understanding of medical tourism with high interest in recent policy trend concerning medical tourism. Her research showed that attributes specialists considered most important were medical infrastructure and service(Chinese language service), medical technology competitiveness(outstanding medical technology), policy and system aspect(remote ante and post treatment care) and regional connectedness(regional connectedness with tourism program) in descending order.

Ⅴ. Conclusion

By 2020, 100 million Chinese will be making trips abroad and China will become world's 4th largest sender of outbound tourists. Prospects for increase in Chinese medical tourists are high. Due to Korea's geographical proximity and high level of medical technology, providing medical tourism market targeting China's high income upper class is a viable prospect. Therefore, the purpose of this study is to reveal major factors in selecting medical tourism destination of Chinese and, in turn, to present optimal selection attribute combination and to provide valuable insights for future marketing.

To do so, this study, conducted on Chinese students in Korea, analyzed utilities of selection attributes and used conjoint analysis to deduce optimal medical tourism product.

Results showed that, of destination attributes, medical technology competitiveness proved be most important and of lower levels, international accreditation proved to have highest utility. JCI accreditation, which is an international accreditation, requires all phases from patient registration to patient discharge to be examined. Based on the review, only credible medical institutions with high level of medical standard can be accredited. Accreditation implies that patient centered treatment environment and facility are internationally recognized and gives much credence to medical tourists who lack information on medical institutions in their destination. Raffles Hospital

in Singapore and Bumrungrad Hospital in Thailand which are recognized to be highly successful hospitals that host inbound medical tourists have already received JCI accreditation.

On the other hand, examination time and waiting time turned out to of lowest importance implying that not much utility is placed on time related factors. Analysis of utility on exclusive brand of dermatology and cosmetic surgery hospitals had third highest utility and the brand name 臉色(liǎnsè) brand was most preferred. Regional tourist attraction level had highest utility of regional connectedness, indicating that travel agencies and medical tourism marketing firms should develop travel packages that take in to account regional attractions. Lastly, in terms of policy and system aspect, government should establish foundations that can provide basis for sound medical dispute settlement. Importance per respondents' demographics was also analyzed. Males had higher utility in medical technology competitiveness and females had higher utility in medical infrastructure and service. Respondents with medical tourism experience had higher utility in medical technology competitiveness and respondents without experience had higher utility in medical infrastructure and service.

This study seeks to present optimal selection combination of medical tourism destination for Chinese who are expected to increase in large numbers in the future. Results of this research can provide valuable insights to hospitals which aspire to host medical tourists, travel agencies and medical tourism marketing firms. This study, however, has following limitations.

First, the sample was collected in Busan and Gyeongnam area and does not reflect characteristics of other regions. Samples, being Chinese students, can not accurately reflect preferences Chinese medical tourists as a whole. Second, sample size was only 101 and is not sufficient size to generalize the findings of the study. Third, the study was only conducted for dermatology and cosmetic surgery hospitals, so the findings can not be applied to other fields of medical service.

Future studies calls for larger sample size and wider range of age, region and occupation. While central and local governments are developing and promoting medical brand and constructing brand image for medical tourism, hospitals that aspire to host Chinese medical tourists should also develop exclusive brand name. Further studies on how to build an image that can lure Chinese medical tourists to Korea are needed.

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국문초록

컨조인트 분석을 이용한 의료관광 상품역량강화에 관한 연구

김경훈* · 유재하** · 이춘수***

의료관광은 의료관광객의 응급하지 않은 의료행위에 대해 해외 의료서비스에 접근할 수 있도록 의료서비스와 관광을 함께 연계하는 것을 의미한다. 전세계적으로 의료관광객의 수가 상당한 수준으로 증가함에 따라 의료관광에 대한 관심은 연구자, 정책 입안자, 그리고 매스 미디어에 이르기까지 폭넓게 관심을 받고 있다. 그러나 의료관광에 대한 체계적이며 세부적인 연구노력은 현재 매우 미진하고 제한적인 편이다.

본 연구에서는 중국 의료관광객이 목적지를 선택할 때 선호하는 의료속성을 파악 및 분석하였다. 중국 의료관광객의 중요 선호속성의 이상적 조합을 통해 한국으로의 중국 의료관광객을 유치를 증진할 수 있을 것이다. 본 연구에서는 컨조인트 분석을 통하여 의료관광 중요 선택속성조합을 도출하였으며 연구결과, 목적지 선택에 있어서 의료 기술의 경쟁력이 가장 중요한 것을 파악되었다. 선택속성조합의 하위요소에 있어서는 국제의료인증이 중요한 사항으로 입증되었다.

본 연구를 통하여 의료기관과 여행에이전시 등 관련 기업에게 마케팅활동을 위한 통찰력을 제공할 것으로 판단된다. 또한 의료관광객이 선호하는 브랜드와 그에 따른 선호요소를 기존의 의료관광목적지 분석연구와 연계하여 좀 더 체계적인 의료관광 상품의 개발과 한국의료관광의 역량을 강화하는데 본 연구가 일조할 것으로 판단된다.

주제어 : 의료관광 상품, 컨조인트 분석, 중국 의료관광객, 의료경쟁력

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