

# Development of a reliable and valid questionnaire considering Indian hospital's perspective of globalization of health in context to India

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**Abstract**— New opportunities and challenges has been created by liberalization of trade in healthcare sector specially in low and middle income group countries to provide effective and efficient healthcare services. Objective of this study was to develop a self administered questionnaire to address hospital's perspective of globalization of health in context to India. Attributes of Indian hospital's perspective in terms of globalization of health were derived from intensive interviews of managers of international wings of Indian hospitals, doctors treating international patients and through literature reviews to arrive at an item questionnaire. Each item was evaluated on a five point Likert scale so that higher scores indicated a more favorable response. 50 subjects were enrolled for this study. Their baseline scores were analyzed on the questionnaire and subjected to item analysis, validity and reliability testing. Based on the information meaningful items were retained and interpreted based on their statistical properties. Reliability of the questionnaire was calculated through cronbach's alpha using spss software version 20. Results shows that during item analysis sixteen items were discarded resulting in a valid and reliable questionnaire. Internal consistency of all the sections of the questionnaire together was 0.920 measured by cronbach's alpha with the help of spss software. Reliability coefficient of individual sections of questionnaire (different subscales) were also calculated and were 0.794 0.817, 0.651, 0.766 and 0.888 respectively. Guttman splithalf reliability coefficient was indicating that the two halves of the questionnaire provided consistent information. The Questionnaire underwent rigorous development, had reliable and valid properties. This questionnaire is intended to help in considering and measuring perspective of Indian hospitals catering to medical tourists about globalization of health.

**Keywords**— Reliability, validity, globalization, item analysis, internal consistency, questionnaire Guttman split half reliability coefficient.

## 1. INTRODUCTION

Healthcare industry is among one of the most rapidly growing industries in the world economy and is continuously faced by new issues and challenges. Healthcare systems have to respond to different challenges caused by cross border trade in delivery of health services through movement of healthcare service seekers, healthcare service providers and different collaborations and joint ventures [1,2]. Now a days cross border trade is considered to be one of the best ways to create and finance the additional resources for healthcare industry in the developing nations of the world [1].

New opportunities and challenges has been created by liberalization of trade in healthcare sector specially in low and middle income group countries to provide effective and efficient healthcare services [1].

The term Globalization is defined as the means of international interaction coming from the exchange of goods, products, people, views, and other aspects of culture [3,4]. Because of advancements in communication and transportation as well as internet facilities interdependence of different nations has increased manifold. It is defined as the system of interaction among the nations of the world so as to develop the global economy. Globalization refers to the interaction and integration of societies and economics all over the world [3]. Initially effects of globalization of health are generally not the primary focus of attention of economists [3]. But now globalization of health has led to a new area –Medical Tourism. Health and medical tourism has become a distinguished worldwide multibillion-dollar industry and India has emerged as a hub and hottest destination for medical tourism as Indian treatment and medical standards are comparable to those of international standards as in developed countries [4].

Globalization of health is defined as practice of travelling of people across the international boundaries in order to obtain healthcare services. It is also described as movement of people to different countries for getting medical services including important, elective or urgent medical procedures [2,3]. Patients from different parts of world like Bangladesh, Saudi Arabia, Pakistan, Canada, United States etc. are frequently coming to India for medical procedures [5]. Patients from United Kingdom who can't wait for medical procedures by National Health Service or can't afford private medical facilities owing to high costs choose to opt developing countries like India for treatment procedures. On other side becoming a medical tourist provides a chance to combine a good vacation with

elective medical procedures. Also patients from poorer countries where good treatment facilities are not available come to India for medical treatment [6,7]. But the hospitals in India where medical tourists come for different medical procedures need to be investigated.

This article reports the development of a self administered questionnaire whose items are customized to cover every aspect of hospital's perspective serving international patients in lieu of globalization of health in context to India. In order to identify & explore the attributes of Indian hospitals catering to medical tourists we undertook an item analysis on baseline responses of a questionnaire. Such an analysis may serve as good contributing factor for subsequent research in assessment of Indian hospitals perspective in lieu of globalization of health. Further the reliability of the questionnaire was checked through cronbach's alpha using spss software.

**1.1 Aim** -To develop a valid and reliable self administered questionnaire to address Indian hospitals perspective of globalization of health in context to India.

### **1.2 Objectives**

The following objectives were formulated to realize the particular aim:

- To construct a conceptual framework for a self administered questionnaire in order to explore the relevant concepts addressing key issues which Indian hospitals encounter while catering to international patients.
- To elaborate and develop a pool of important potential questions based on information provided by experts in the area and through extensive survey of available literature.
- To formulate a preliminary questionnaire from the item pool of questions.
- To ensure proper reliability and validity of the questionnaire in order to further refine the questionnaire.
- To establish and construct a final valid and reliable questionnaire addressing key issues related to Indian Hospitals while treating international patients.

## **2. RESEARCH METHODS**

A pilot study was done on five hospitals in NCR region in India and their perspective of globalization of health in context to India was calculated. The resulting questionnaire – Indian hospital's perspective of globalization of health in context to India consisted of 60 questions and responses to each item were based on Likert scale ranging from strongly agree to strongly disagree.

Responses of fifty subjects including managers of hospitals in NCR region serving medical tourists and doctors treating these patients were analyzed so that a higher item score indicated a more favorable attitude. Each of 60 items received equal weight when summed to arrive at a total score. The total score can therefore be as low as 60 (least favorable) and as high as 300 (most favorable).

### **2.1 Questionnaire development**

The questionnaire development process consisted of four steps

1. Preparation of scope and structure of questionnaire items
2. To elaborate the items of questionnaire
3. Development of a preliminary questionnaire
4. Pilot study for further evolution of preliminary questionnaire
5. Item analysis to refine the questionnaire
6. Reliability of the questionnaire

#### **Step 1- Preparation of scope and structure of questionnaire items**

Data was collected through extensive thorough and in depth interviews of managers of international wings and doctors of different hospitals in Delhi and NCR region as well as through intensive review of literature in order to have an in depth information about the different aspects a questionnaire. Data was also collected through interviews of the hospital staff dealing with international patients who had a deep understanding of different attributes of medical tourism industry.

#### **Step 2 – To elaborate the items of questionnaire**

Based on the information collected, content and items considering Indian hospital's perspective of globalization of health in context to India were identified on Likert scale which is a five point response scale ranging from strongly agree to strongly disagree and an item pool of 120 questions was generated. The initial item pool was further reduced to 80 items and only clear, specific, important and non redundant items were retained. Unambiguous and simple wording of responses and items were given importance and such items were included. Questionnaire items were developed in such a way that reliability and validity of questionnaire is established [8].

**Content validity** is described as systematic evaluation and examination of the test content to ensure if it covers a representative sample of behavior domain to be measured [9,10]. It refers to how well an instrument or a test measures what it is supposed to measure. The items of the questionnaire should cover essential and important aspects of strengths, weaknesses, opportunities and challenges of Indian medical tourism as per Indian hospital's perspective [9].

**Face validity** is defined as the relevance or transparency of a measuring instrument as they appear to test participants [9, 10]. In other words a measuring instrument or a test is said to have face validity if it looks like it will measure what it is supposed to measure [8]. People who are expert in the relevant area and with the target group are usually the best judges of face validity [9].

In order to ensure face validity and content validity of the questionnaire, the item pool was evaluated by four doctors and two managers of international wings of Artemis and Medanta Hospital Gurgaon having relevant experience in target field. They were requested to examine the questionnaire with item pool of 80 questions for accuracy, parsimony, appropriateness and relevance measuring the strengths, weaknesses, opportunities and challenges of globalization of health as per their perspective in reference to India. The experts selected 70 items from the item pool and these items became the first questionnaire draft and all questions were constructed on Likert scale. These 70 items were then evaluated again as a second evaluation by expert panel to further select the items of questionnaire for adequate coverage of all aspects of Indian medical tourism as per their perspective. After the second review by the expert panel some changes were made in some items and second draft of questionnaire consisted of 60 questions. Changes in the questionnaire included editing of some questions, removing and adding new questions.

### **Step 3 – Development of preliminary questionnaire**

A self administered questionnaire was established comprising of 60 questions. The first page of the questionnaire included instructions for the completion of questionnaire and demographic details of respondents including name of doctor/manager, name of the hospital catering such patients. The 60 questions were put in random order within their respective sections in the questionnaire so as to avoid any biasness in numbering and positioning of items in the questionnaire.

### **Step 4 - Pilot study for further evolution of preliminary questionnaire**

A pilot study was carried out to examine whether the questionnaire was compatible and appropriate in the target group i.e .the doctors, managers of international wing of hospitals, nurses and other hospital staff. 50 such subjects were selected from Apollo hospital New Delhi, Asian Hospital Faridabad, Medanta Medicity Gurgaon and Artemis Hospital Gurgaon to respond to different items of the questionnaire. The results were analyzed for internal consistency using spss software version 20 quantitatively and qualitatively by examining the respondent's comments on compatibility and interpretability of items, lack of important items and time used for completing the questionnaire.

### **Step 5 – Item analysis to refine the questionnaire**

The aim of this step was to test the appropriateness of each item to be included in the questionnaire statistically known as item analysis. Item analysis includes-

Item difficulty index assessment – Kline suggests that the items are not considered to be useful if they are answered correctly by less than 20% or more than 80% of respondents [11,12] In this research 6 items were answered correctly by more than 80% of the respondents and 4 items by fewer than 30% of the respondents. So these ten items were removed from the questionnaire.

Item discrimination – It is the ability of each individual item to discriminate between the people having different knowledge levels and was measured by correlating the score on each item with overall test score using spss version 20. An item to total score correlation of 0.2 is said to be the cutoff point and the items less than 0.2 should be discarded [8,12,13]. Based on this criteria of item discrimination further five items were excluded from the questionnaire.

### **Step 6 - Reliability and of questionnaire**

After fulfilling the validity part and performing item analysis, the questionnaire was evaluated to assess its reliability which is described as the ability of a questionnaire to measure the consistency of an item/attribute and how well the items correlate with each other and fit together, conceptually [9,14]

Internal consistency refers to the homogeneity of all the items of the questionnaire. This was measured by cronbach's alpha using spss software version 20. Cronbach  $\alpha$  values range from 0 to 1 and a score of 0.7 or higher is acceptable [10,13]. Cronbach alpha was calculated for the whole questionnaire i.e. entire scale and for the different sections of the questionnaire i.e. subscales.

SplitHalf reliability is measured by dividing the scale into two halves which may be first half of the questionnaire versus last half or odd items of the questionnaire versus even items of the questionnaire. Correlation is then carried out between the two halves of the questionnaire. A high correlation score shows that the two sets of the questionnaire have consistent information which means that if a subject scores high on one set of items he will also score high on second set of item[9,15]. This indicates that all the items of the questionnaire measure the same concept. This was measured using spss software version 20 for the questionnaire.

### 3. RESULTS

#### 3.1 Content validity

A score of four or three on CV index indicates that the content is valid and is appropriate with the conceptual framework (Lynn 1996). For example, if three of five experts rate an item as relevant (4 or 5) the CVI would be  $3/5=0.6$ , but the level required is 0.8 (4/5), and indicates that the item should be dropped [10]. Therefore, twelve items in the questionnaire were invalid because they yielded CVIs of  $3/5=0.6$  to  $2/5=0.4$  and were discarded from the questionnaire. Rest of the items were valid with CVIs ranging from 0.8 (4/5) to 1.00 (5/5) and were retained in the questionnaire.

#### 3.2 Face validity

All the subjects rated each item at four or five on a Likert scale of 1-5. Ninety percent said they have understood all the questions thoroughly and found the questions easy to answer, and 95% indicated that the appearance and layout of the questionnaire would be appropriate with the intended target population thus assuring good face validity of the questionnaire.

#### 3.3 Item analysis

In this process of development of questionnaire, 2 items were answered correctly by more than 80% of the respondents and 3 items by fewer than 30% of the respondents. So these five items were discarded from the questionnaire.

Item discrimination – It was measured by correlating the score on each item with overall test score using spss version 20. An item to total score correlation of 0.2 is said to be the cutoff point below which items should be discarded [12]. Based on this criteria further ten items were discarded and hence a questionnaire with 44 items was developed. (Table 1,2 {1.1, 1.2, 1.3,2.1,2.2,2.3})

**Table 1**

Table 1.1 Case Processing Summary				Table 1.2 Reliability Statistics	
Cases	Valid	49	98.0	Cronbach's Alpha	N of Items
	Excluded <sup>a</sup>	1	2.0	.871	60
	Total	50	100.0		

**Table 1.3 Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
admission process	190.20408	415.499	.457	.866
Infrastructure	190.55102	405.628	.654	.863
Coordination	190.38776	407.117	.615	.864
HR	189.91837	419.785	.335	.868
Confidentiality	189.83673	416.223	.478	.866
Counseling	189.67347	419.849	.423	.867
pickup facility	191.91837	416.410	.369	.867

Staff	189.87755	428.818	<b>.133</b>	.871
online diagnosis	191.04082	421.915	.215	.870
proper attn.	191.16327	437.598	<b>-.113</b>	.875
lack of hospitality	191.81633	423.986	.216	.870
daycare staff	190.16327	429.598	<b>.066</b>	.872
sensitive staff	189.89796	415.427	.425	.867
information sharing	190.51020	411.547	.443	.866
handle complications	190.32653	412.641	.422	.867
pharma sector	190.63265	419.279	.286	.869
communication skills	190.81633	413.195	.504	.866
skilled clinicians	190.38776	430.367	<b>.072</b>	.871
Availability	191.32653	427.849	<b>.087</b>	.872
knowledgeful staff	191.04082	429.415	<b>.058</b>	.873
Interpreter	190.20408	415.499	.457	.866
Linguistic	190.55102	405.628	.654	.863
selectronic transfer	190.38776	407.117	.615	.864
Revenue	189.91837	419.785	.335	.868
Accommodation	189.83673	416.223	.478	.866
dietary services	189.67347	419.849	.423	.867
palatable food	191.91837	416.410	.369	.867
exclusive wing	189.87755	428.818	<b>.133</b>	.871
Quality	191.04082	421.915	.215	.870
online counseling	191.16327	437.598	<b>-.113</b>	.875
healthcare policies	191.81633	423.986	.216	.870
medical treatment	190.16327	429.598	<b>.066</b>	.872
Cost	189.89796	415.427	.425	.867
trained staff	190.51020	411.547	.443	.866
Technology	190.32653	412.641	.422	.867
services at par	190.81633	413.195	.504	.866
gold seal	190.38776	430.367	<b>.072</b>	.871
technocentric approach	191.32653	427.849	<b>.087</b>	.872
provision of wings	191.04082	429.415	<b>.058</b>	.873
sudden boom	190.32653	412.641	.422	.867
superior medical care	190.63265	419.279	.286	.869
national health policy	190.81633	413.195	.504	.866
security hassles	190.38776	430.367	<b>.072</b>	.871
business strategies	191.32653	427.849	<b>.087</b>	.872
brain drain	192.32653	424.391	.250	.869
Competition	191.34694	458.231	<b>-.519</b>	.882
economic recession	191.40816	422.622	.294	.869
Obama	191.53061	415.421	.466	.866
overseas govt	191.71429	417.583	.308	.868
medico legal security	191.24490	410.314	.513	.865
political stability	191.79592	412.541	.463	.866
Africa	191.00000	434.833	<b>-.053</b>	.875
Insurance	191.73469	418.616	.384	.867
medical visa	191.81633	411.736	.529	.865
Government	191.00000	427.667	.164	.870
tourist destinations	191.77551	414.136	.513	.866
travel agencies	191.53061	415.421	.466	.866
training program	191.71429	417.583	.308	.868
CME	191.24490	410.314	.513	.865
disease spread	191.79592	412.541	.463	.866

Spss output for item analysis for 60 item questionnaire (corrected interitem correlation values). Values less than 0.2 were discarded

**Table 2**

**Table 2.1 Case processing summary**

		N	%
Cases	Valid	50	100.0
	Excluded <sup>a</sup>	0	.0
	Total	50	100.0

**Table 2.2 Reliability Statistics**

Cronbach's Alpha	N of Items
.919	44

**Table 2.3 Item-Total Statistics**

	scale mean if item deleted	scale variance if item deleted	corrected item-total correlation	cronbach's alpha if item deleted
admission process	136.72000	412.900	.496	.916
Infrastructure	137.06000	404.792	.647	.915
Coordination	136.90000	404.704	.649	.915
HR	136.44000	414.823	.435	.917
Confidentiality	136.36000	412.153	.564	.916
Counseling	136.20000	419.673	.387	.917
pickup facility	138.40000	414.816	.367	.918
online diagnosis	137.56000	418.374	.264	.919
lack of hospitality	138.32000	423.528	.195	.919
sensitive staff	136.44000	416.415	.365	.918
information sharing	137.02000	409.122	.471	.916
handle complications	136.84000	412.300	.405	.917
pharma sector	137.16000	422.056	.197	.920
communication skills	137.34000	413.413	.468	.917
Interpreter	136.72000	412.900	.496	.916
Linguistic	137.06000	404.792	.647	.915
selectronic transfer	136.90000	404.704	.649	.915
Revenue	136.44000	414.823	.435	.917
Accommodation	136.36000	412.153	.564	.916
dietary services	136.20000	419.673	.387	.917
palatable food	138.40000	414.816	.367	.918
Quality	137.56000	418.374	.264	.919
healthcare policies	138.32000	423.528	.195	.919
Cost	136.44000	416.415	.365	.918
trained staff	137.02000	409.122	.471	.916
Technology	136.84000	412.300	.405	.917
services at par	137.34000	413.413	.468	.917
sudden boom	136.84000	412.300	.405	.917
superior medical care	137.16000	422.056	.197	.920
national health policy	137.34000	413.413	.468	.917
brain drain	138.84000	422.831	.258	.918
economic recession	137.96000	416.856	.409	.917
Obama	138.06000	410.711	.563	.916
overseas govt	138.26000	413.788	.359	.918
medico legal security	137.78000	404.379	.625	.915

political stability	138.34000	409.576	.499	.916
Insurance	138.26000	416.564	.407	.917
medical visa	138.36000	407.011	.613	.915
Government	137.50000	424.255	.227	.919
tourist destinations	138.30000	410.214	.592	.915
travel agencies	138.06000	410.711	.563	.916
training program	138.26000	413.788	.359	.918
CME	137.78000	404.379	.625	.915
disease spread	138.34000	409.576	.499	.916

### 3.4 Internal Reliability of questionnaire

After item analysis reliability coefficient was calculated for the questionnaire through cronbach's alpha with spss version 20 and was 0.919 which indicates a high correlation between different items of the questionnaire and is reliable consistently. Now the questionnaire consisted of 44 items (Table 2.). Further two items were removed from the questionnaire on the basis of spss results cronbach's alpha if item deleted. This further increased the reliability coefficient to 0.920 which is considered to be a very good and ideal alpha value for the questionnaire in terms of reliability and a questionnaire with 42 items was developed (Table 3 {3.1, 3.2}). Reliability coefficient of different subscales or individual sections of questionnaire were also calculated. For section with nine items i.e Professionalism in management of hospital alpha was 0.794. For second section i.e Competence of Doctors and staff alpha was 0.817, for third section i.e Facilitation and care alpha calculated was 0.651. Similarly for fourth and fifth Cost and quality of treatment and Political and legal factors cronbach's alpha values were 0.766 and 0.888 (Table 4).

**TABLE 3**

**Table 3.1**

Cronbach's alpha	No. of items
0.920	42

**Table 3.2** **Item-Total Statistics**

	scale mean if item deleted	scale variance if item deleted	corrected item-total correlation	cronbach's alpha if item deleted
admission process	130.18000	394.885	.507	.917
Infrastructure	130.52000	386.785	.662	.915
Coordination	130.36000	386.439	.670	.915
Hr	129.90000	396.908	.442	.918
Confidentiality	129.82000	394.232	.573	.917
Counseling	129.66000	401.413	.404	.918
pickup facility	131.86000	396.531	.381	.919
online diagnosis	131.02000	400.673	.263	.920
lack of hospitality	131.78000	405.440	.201	.920
sensitive staff	129.90000	399.357	.348	.919
information sharing	130.48000	392.500	.450	.918
handle complications	130.30000	395.276	.391	.919
pharma sector	130.62000	406.649	.142	.921
communication skills	130.80000	396.041	.460	.918
Interpreter	130.18000	394.885	.507	.917
Linguistic	130.52000	386.785	.662	.915
selectronic transfer	130.36000	386.439	.670	.915
Revenue	129.90000	396.908	.442	.918
Accommodation	129.82000	394.232	.573	.917

dietary services	129.66000	401.413	.404	.918
Quality	131.02000	400.673	.263	.920
healthcare policies	131.78000	405.440	.201	.920
Cost	129.90000	399.357	.348	.919
trained staff	130.48000	392.500	.450	.918
Technology	130.30000	395.276	.391	.919
services at par	130.80000	396.041	.460	.918
sudden boom	130.30000	395.276	.391	.919
national health policy	130.80000	396.041	.460	.918
brain drain	132.30000	404.827	.264	.919
economic recession	131.42000	399.024	.413	.918
Obama	131.52000	393.479	.553	.917
overseas govt	131.72000	395.879	.364	.919
medico legal security	131.24000	386.839	.628	.916
political stability	131.80000	391.633	.509	.917
Insurance	131.72000	398.777	.410	.918
medical visa	131.82000	389.375	.617	.916
tourist destinations	131.76000	392.594	.593	.916
travel agencies	131.52000	393.479	.553	.917
training program	131.72000	395.879	.364	.919
CME	131.24000	386.839	.628	.916
disease spread	131.80000	391.633	.509	.917
palatable food	131.86000	396.531	.381	.919

**Table 4.** Reliability Statistics for subscales of questionnaire measuring Indian hospital's perspective of globalization of health

	SUBSCALES	NO. OF ITEMS IN SUBSCALE	CRONBACH'S ALPHA
	Professionalism in management of hospital	9	0.794
	Competence of doctors and staff	5	0.817
	Facilitation and care	7	0.651
	Cost and quality of treatment	8	0.766
	Political, economic & legal factors	13	0.888

### 3.5 Split half reliability of the questionnaire:

Correlation between two halves for the questionnaire measuring Indian hospitals perspective of globalization of health was 0.657 which indicates high degree of correlation between two halves of the questionnaire. Spearman-Brown coefficient calculated was 0.793 and Guttman Split half coefficient was 0.790 indicating that the two halves of the questionnaire provided consistent information (Table 5).

**Table 5.** Split half reliability of the questionnaire measuring Indian hospitals perspective of globalization of health

Reliability Statistics			
Cronbach's Alpha	Part 1	Value	.864
	N of Items		21 <sup>a</sup>
Cronbach's Alpha	Part 2	Value	.809
	N of Items		21 <sup>b</sup>
	Total N of Items		42
Correlation Between Forms			.657
Spearman-Brown Coefficient	Equal Length		.793
	Unequal Length		.793
Guttman Split-Half Coefficient			.790

#### 4. DISCUSSION

In this study, specific and careful attention was paid to the development of questionnaire addressing Indian hospital's perspective of globalization of health in context to India. Main emphasis and priority during the whole study was to ensure reliability and validity of the questionnaire. Every draft of the questionnaire was thoroughly reviewed by panel of experts in order to ensure content and face validity of the questionnaire and to select best items in terms of clarity, accuracy and representativeness of items. Certain items were removed and some new items were added to the questionnaire depending upon the opinions and recommendations of the experts. In this study proper and adequate emphasis was laid to ensure face validity of questionnaire which was done by including and analyzing the discussion of all items and answers with experts and the respondents so that they can comment thoroughly on design and impact of questionnaire. Face validity helped in providing important concepts about operationalization of the questionnaire by experts from Indian hospitals catering to medical tourists. Content validity indicated the information that content of the questionnaire was relevant to the concept of globalization in context to India. The questionnaire was divided into five sections which provide the opportunity to assess both the general and more specific information regarding globalization of health in Indian context. Internal consistency for the questionnaire was calculated in two ways: Cronbach's alpha and split half reliability. Cronbach's alpha was calculated for the questionnaire and it was 0.920 which indicates that there exists a high correlation between different items of the questionnaire and the questionnaire is considered to be consistently reliable. There are different views about ideal Cronbach's alpha value. One opinion is that for the instruments which are used in clinical settings cronbach's alpha should be at least 0.90 [14] Other opinion is that an alpha of 0.70 is acceptable for the new instrument [15]. In this study, alpha calculated for the entire questionnaire was 0.920 which is pretty good for new measuring instrument. If a measuring instrument consists of two or more than two subscales alpha should be calculated for the entire scale as well as for the subscales [14]. Since the questionnaire possesses five subscales and therefore Cronbach's alpha was calculated for the five subscales. Alpha calculated for four subscales were more than 0.7 but for subscale three i.e Facilitation and care alpha was found to be 0.651 which did not meet the score of 0.7 but was close to specified value and was retained for the sake of content validity after consultation with experts. Internal consistency was highest for fifth section i.e 0.888 and also for overall scale (0.920). Retaining questions that did not meet the internal consistency criteria for the sake of content validity can influence consistency of the questionnaire and statistical result but expert panel was of the opinion that it is important to retain these items in order to test the essentials components of the questionnaire. Guttman split half coefficient with spss software was used to calculate split half reliability of the questionnaire which was 0.790 indicating that the two halves of the questionnaire provided consistent & stable information. Correlation score between the two halves of the questionnaire was calculated to be 0.657 which was a good correlation score indicating that there existed a moderate degree of correlation between the two halves of the questionnaire [9].

#### 5. CONCLUSION AND IMPLICATIONS

This questionnaire has been designed to assess the attitude of Indian hospital's catering to medical tourists addressing their perspective towards globalization of health in context to India. It was designed to find out the reasons why hospitals in India are favorable choice for international patients as a destination for various medical procedures, what are the strengths of Indian medical tourism sector, what are the opportunities available in India as far as medical tourism is concerned, what are the weaknesses of Indian medical tourism and what can be the challenges India is facing in this sector. This questionnaire possesses good content and face validities, excellent reliability and therefore it should provide an important and useful tool for measuring Indian hospitals perspective towards globalization of health. In order to add more strength to the rigor of the questionnaire for future research, it is recommended

that convergent and discriminant validity can be calculated to evaluate the similarities and differences of questionnaire with other available tools measuring identical concepts. Confirmatory factor analysis can be done to add to the generalizability of the questionnaire. However we believe that this questionnaire is a valid and reliable tool to measure the perspective of Indian hospitals catering to medical tourists coming to India for medical procedures.

## QUESTIONNAIRE

### GLOBALIZATION OF HEALTH

(Hospital Perspective)

Consultant's / Manager's name-

Hospital name-

Address-

Phone no.-

#### Section -1

##### Professionalism in management of hospital

**1. Admission process for international patients coming to India for treatment is swift & easy in hospitals.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**2. Proper attention is paid to needs of international patients in hospitals in India.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**3. There is good coordination between different wards & departments treating the international patients.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**4. Human resources in India is biggest strength and growth driver for MT.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**5. Good counseling facility is provided to international patients on arrival to hospitals in India.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**6. Proper pick up facility is provided to the international patients from airport to the concerned hospital.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**7. Assurance of confidentiality is provided to the international patients in Indian hospitals.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**8. Indian hospitals provide facilities of online diagnosis especially for post care and future consultation.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

#### Section-2

##### Competence of Doctors and staff

**1. Staff recruited for international patients in hospitals is sensitive to patients needs and is quick & responsive.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**2. Knowledgeable and skillful nursing staff is present in Indian hospitals for international patients.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**3. Indian doctors and clinical staff possess ability to handle serious medical complications.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**4. Hospitals in India have strong Pharma sector with worldwide recognition.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**5. Doctors in Indian hospitals are willing to share information as and when required by international patients.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**Section-3**

**Facilitation and care**

**1. Translator/interpreter facility is readily available in hospitals in India.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**2. Linguistic abilities of doctors and other clinical staff is compatible with international patients.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**3. Indian hospitals provide good accommodation facilities for international patients and their companions.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**4. Provision of special dietary services is there in hospitals in India for medical tourists.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**5. Hospitals in India provide the facility of electronic transfer of Medical records to & from the perspective medical tourist.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**Section-4**

**Cost and quality of treatment**

**1. Globalization has an impact on health care policies and revenue in hospitals in India.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**2. Cost for various medical procedures is lower in India than those of developed countries.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**3. Best quality medical treatment is available in India compatible to those of developed countries.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**4. Best technology and quality equipment is available in Indian hospitals which is compatible to those of developed countries.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**5. Infrastructure of Indian hospitals is at par with that of developed countries.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**6. Indian hospitals are adapting techno-centric approach to healthcare.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**7. Superior quality reasonable priced medical care with abundant human resources and tourist destinations is major key drive for medical tourist industry.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**Section-5**

**Political and legal factors**

**1. Medico legal security is provided to medical tourists in India if a post operative complication develops upon to departure to patients of India.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**2. Hospitals in India have agreement in India with medical insurance companies and government over seas**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**3. Due to public sector inequality there is a brain drain of medical tourist from public to private hospitals.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**4. Indian government is taking adequate steps to promote MT.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**5. Recent economic recession is a boon for Medical tourism industry.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**6. Recent economic recession is a bane for Medical tourism industry.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**7. Security hassles from countries like Pakistan are faced by Medical tourists.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**8. Political stability in India is a key growth driver for medical tourists.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**9. Tourist from Africa and Middle East are maximum in number visiting India for Medical tourism.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**10. Severe competitions among hospitals in India is biggest challenge for medical tourists.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**11. Good tourist destinations for recreation in India is a boon for medical tourist industry.**

Strongly Disagree Disagree Undecided Agree Strongly Agree

**12. Hospitals have tie ups with travel agencies for interests of international patients.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**13. A structured training program is required in medical tourism sector to better handle international patients & their issues.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**14. CMEs, conferences on globalization of health help in booming Medical tourist industry.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**15. There are increased chances of spread of non communicable diseases as a result of globalization of health.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**REFERENCES:**

[1] Siddiqi, S., A. Shennawy, Z. Mirza, N. Drager and B. Sabri. "Assessing trade in health services in countries of the Eastern Mediterranean from a public health perspective". *Int. J. Health Plann. Manage.*, vol. 25, issue 3, pp 231-50, 2010. doi: 10.1002/hpm.989 Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/19676048>

[2] Chanda R. "Trade in health services". *Bulletin of the World Health Organization*, 80 (2) CMH Working Paper Series, Paper No. WG4: 5, 2002. Retrieved from [www.cmhealth.org/wg4\\_paper5.pdf](http://www.cmhealth.org/wg4_paper5.pdf)

[3] Al-Rodhan, R.F. Nayef and Gérard Stoudmann. "[Definitions of Globalization: A Comprehensive Overview and a Proposed Definition](#)", [June 19, 2006](#). Retrieved from [www.gcsp.ch/.../Definitions+of+Globalization+-+A+Comprehensive+Ove..](http://www.gcsp.ch/.../Definitions+of+Globalization+-+A+Comprehensive+Ove..)

[4] Albrow, Martin and Elizabeth King "Globalization, Knowledge and Society" London: Sage Publications. [ISBN 978-0803983243](#) pp.8, 1990.  
Retrieved from: <http://www.amazon.co.uk/Globalization-Knowledge-Society-International-Sociology/dp/0803983247>

[5] Huynen, M. MTE., Martens, P., Hilderink, B.M "The health impacts of globalization: a conceptual framework" *Globalization and Health*, 2005. DOI: 10.1186/1744-8603-1-14. Retrieved from <http://www.globalizationandhealth.com/content/1/1/14>

[6] Badwe, A.N., Giri, P.A, Latti, R.G. "Medical Tourism in India: A new avenue" *International Journal of Biomedical and Advance Research*, 2012. DOI: 10.7439/ijbar.v3i3.337.  
Retrieved from <http://ijbar.ssjournals.com/index.php/journal/article/view/110/634>

[7] Dawn, K.S., Pal, "Medical tourism in India: Issues, opportunities and designing strategies for growth and development" *International Journal of Multidisciplinary Research* vol 1, issue 3, 2011. Retrieved from <http://zenithresearch.org.in/images/stories/pdf/2011/July/16%20SUMAN%20KUMAR%20DAWN.pdf>

[8] Parsian, N., Dunning, T. "Developing and Validating a questionnaire to measure spirituality: A psychometric process" *Global journal of health science*, vol1, issue 1, 2009.  
Retrieved from [ccsenet.org/journal/index.php/gjhs/article/download/1104/1061](http://ccsenet.org/journal/index.php/gjhs/article/download/1104/1061).

[9] Haladyna, T. "Developing and validating multiple choice test items". New Jersey: Lawrence Erlbaum, 1999.

[10] Hendrie, G. A., Cox, D.N., Coveney, J. "Validation of general nutrition knowledge questionnaire in an Australian community sample". *Nutrition & Dietetics*, pp 72-77, 2008. DOI:10.1111/j.1747-0080.2007.00218.x. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1111/j.1747-0080.2007.00218.x/full>

[11] Kline, P. The handbook of psychological testing. London: Routledge, 1993.

[12] Paramenter, K., Wardle, J. "Development of a general nutrition knowledge questionnaire for adults" European Journal of Clinical Nutrition. Pp 298-308, 1999.

Retrieved from [www.ucl.ac.uk/hbrc/diet/140.pdf](http://www.ucl.ac.uk/hbrc/diet/140.pdf).

[13] Streiner, D.L., Norman, G.R. "Health measurement scales: A practical guide to their development and use". Oxford: Oxford University Press, 1992.

[14] Parsian, N., Dunning, T. "Developing and Validating a questionnaire to measure spirituality: A psychometric process". Global journal of health science, vol 1, issue 1, 2009.

Retrieved from [ccsenet.org/journal/index.php/gjhs/article/download/1104/1061](http://ccsenet.org/journal/index.php/gjhs/article/download/1104/1061).

[15] Saw, S.M., Ng, T.P. "The design and assessment of questionnaires in clinical research". Singapore Medical Journal, pp 131-135, 2001.

Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/11405568>