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## Development of a Reliable and Valid Questionnaire Considering International Patient's Perspective of Globalization of Health in Context to India

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### **Abstract:**

**OBJECTIVE** - To develop a self administered questionnaire to address international patient's perspective of globalization of health in context to India.

**RESEARCH DESIGN & METHODS** – Attributes of international patient's perspective for India in terms of globalization of health were derived from intensive interviews of international patients and experts and thorough literature reviews to arrive at a 34 item questionnaire. Each item was analyzed on a five point Likert scale so that higher scores indicated a more favorable response. 60 subjects were enrolled for this pilot study. Their baseline scores were evaluated 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.

**RESULTS** – Results shows that during item analysis ten items were discarded resulting in a valid and reliable questionnaire. Internal consistency of all the sections of the questionnaire together was 0.92 measured by cronbach's alpha with the help of spss. Reliability coefficient of individual sections of questionnaire (different subscales) were also calculated and were 0.735, 0.664, 0.748, 0.713 and 0.637 respectively. Guttman splithalf reliability coefficient was 0.928 indicating that the two halves of the questionnaire provided consistent information.

**CONCLUSIONS** The Questionnaire underwent rigorous development, had reliable and valid properties. This questionnaire is intended to help in considering and measuring international patient's perspective of globalization of health in context to India.

**Key words:** Reliability, validity, globalization, item analysis, internal consistency

### **1. Introduction**

Globalization is generally viewed as the movement of goods, people, ideas, technology, information and strategies across the boundaries. The primary focus of attention of effects of globalization is economic growth and development of country.<sup>2,4,11</sup> Initially effects of globalization of health is generally not the primary focus of attention of economists<sup>11</sup>. But now globalization of health has led to a new arena –Medical Tourism. Health and medical tourism has become a worldwide multibillion-dollar industry and India has emerged as hottest destination for medical tourism as Indian treatment and medical standards are at par with those of international standards as in developed countries.<sup>2</sup>

Globalization of health is described as practice of movement of people across the international boundaries to obtain healthcare. In other words it is described as travelling of people to different countries for getting medical care including urgent or elective medical procedures.<sup>2,11</sup> Patients from different parts of world like Canada, Bangladesh, Saudi Arabia, Pakistan, United States etc. are frequently coming to India for medical procedures.<sup>4</sup> 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 there are patients from poorer countries where good treatment facilities are not available.<sup>4</sup> But the international patients perspective who choose to consider India for medical procedures needs to be investigated.

This article reports the development of a self administered questionnaire whose items are customized to cover every aspect of international patient's perspective of globalization of health in context to India. In order to explore and identify attributes of international patient's perspective considering India as their favorable destination for medical procedures, 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 international patient's 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 international patient's perspective of globalization of health in context to India.

### 1.2. Objectives

The following objectives were formulated to realize the particular aim:

- To formulate a conceptual framework for a self administered questionnaire in order to identify the relevant concepts addressing key issues in terms of international patient's perspective of globalization of health.
- To develop a pool of potential questions based on information provided by experts and through extensive literature survey.
- To construct a preliminary questionnaire from the item pool.
- To ensure reliability and validity of the questionnaire in order to further refine the questionnaire.
- To construct final valid and reliable questionnaire addressing international patient's perspective of globalization of health in context to India.

## 2. Research Methods

A pilot study was done on sixty international patients and their perspective of globalization of health in context to India was calculated. The resulting questionnaire – International patient perspective of globalization of health in context to India consisted of 46 questions and responses to each item were based on Likert scale ranging from strongly agree to strongly disagree.

Responses of forty international patients to each item on the questionnaire were analyzed so that a higher item score indicated a more favorable attitude. Each of 46 items received equal weight when summed to arrive at a total score. The total score can therefore be as low as 46 (least favorable) and as high as 230 (most favorable).

### 2.1. Questionnaire Development

The questionnaire development process consisted of four steps

- Preparation of scope and structure
- Development of questionnaire items
- Construction of a preliminary questionnaire
- Pilot study for further development of questionnaire
- Item analysis to refine the preliminary questionnaire
- Reliability of the questionnaire

#### Step 1- Preparation of scope and structure

Data was collected through intensive in depth interviews of international patients in different hospitals of Gurgaon and Faridabad as well as through intensive literature review to get in depth information of different aspects a questionnaire should cover. Data was also collected through interviews of the doctors dealing with international patients and the managers of international wings of Asian hospital Faridabad, Medanta Hospital Gurgaon and Artemis Hospital Gurgaon who had a deep understanding of different attributes of medical tourism industry.

#### Step 2 – Development of questionnaire items

Based on all the available information content and items considering patient 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 90 questions was generated. The initial item pool was further reduced to 75 items and only specific, clear and non redundant items were considered. Emphasis was laid on using unambiguous and simple wording of responses and items. The most important part of questionnaire development lies in ensuring that they should be developed in such a manner that reliability and validity is established.<sup>17</sup>

Content validity refers to systematic examination of the test content to determine if it covers a representative sample of behavior domain to be measured.<sup>9,10</sup> It indicates how well a test or an instrument measures what it is supposed to measure. The items should cover essential aspects of opportunities and challenges of Indian medical tourism as per international patient's perspective.<sup>9</sup>

Face validity refers to the relevance or transparency of a measuring instrument as they appear to test participants.<sup>9,10</sup> In other words a test can be said to have face validity if it looks like it is going to measure what it is supposed to measure.<sup>19</sup> People who are expert with the target group are usually the good judges of face validity.<sup>9</sup>

In order to ensure face validity and content validity of the questionnaire, the item pool was evaluated by four international patients and two managers of international wings of Artemis and Medanta Hospital Gurgaon having relevant experience in target field. They were requested to evaluate the questionnaire with item pool of 75 questions for accuracy, appropriateness and relevance measuring the opportunities and challenges of globalization of health as per their perspective in reference to India. The experts selected 60 items from the item pool and these items became the first questionnaire draft and all questions were constructed on

Likert scale. These 60 items were then subjected to a second evaluation by expert panel to further select the items for adequate coverage of all aspects of Indian medical tourism and structure of different questionnaire sections. Expert panel review led to changes in some items and second draft of questionnaire consisted of 45 questions. Changes in the questionnaire included editing of some items, removing and adding new items.

### Step 3 – Construction of preliminary questionnaire

A self administered questionnaire was constructed consisted of 45 questions. The first page of the questionnaire included few instructions for the completion of questionnaire and demographic details of respondents including name, age, date of birth, country they belong to and the name of the hospital where they have come along with the name of specific medical procedure. The 45 items were randomly ordered within their respective sections in the questionnaire in order to avoid any biasness in positioning of items in the questionnaire.

### Step 4 - Pilot study in target group

A pilot study was conducted to test whether the questionnaire was appropriate in the target group i.e .the international patients. 60 international patients were selected from Asian Hospital Faridabad, Medanta Medicity Gurgaon and Artemis Hospital Gurgaon to respond to different items of the questionnaire. The results were analyzed quantitatively for internal consistency using spss software version 20 and qualitatively by looking at the respondent's comments on interpretability of items, lack of important items and time used for filling in the questionnaire.

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

The purpose of this step was to examine 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.<sup>12,15</sup> In this study 3 items were answered correctly by more than 80% and 2 items by fewer than 30% of the respondents. So these five items were excluded from the questionnaire.

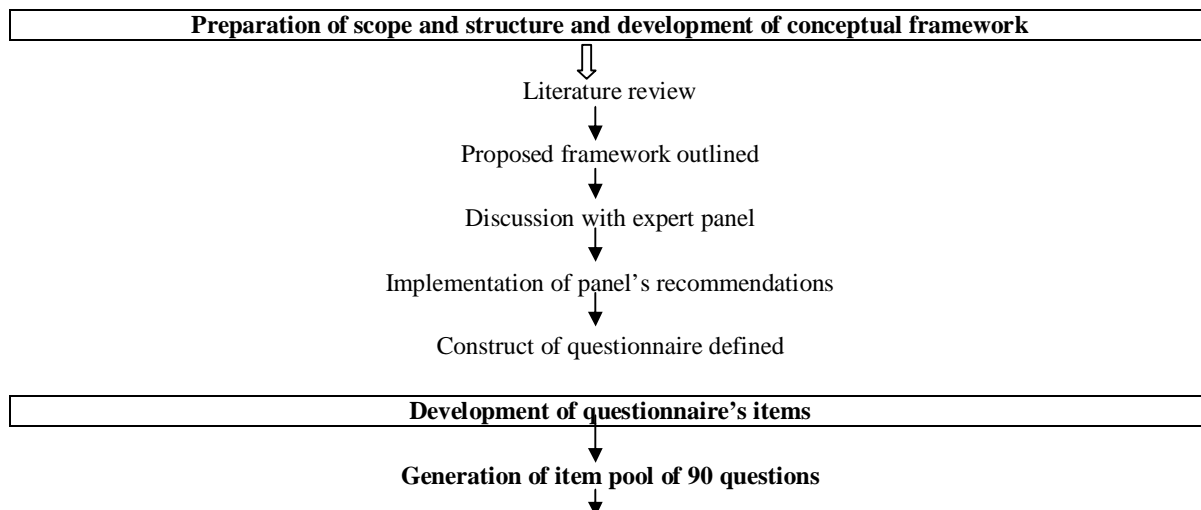
Item discrimination – It is the ability of each individual item to discriminate between the people having different knowledge levels and was measured by correlating the score on each item with overall test score using spss version 20. An item to total score correlation of 0.2 is said to be the cutoff point below which items should be discarded.<sup>8,12,18</sup> Based on this criteria further five items were discarded.

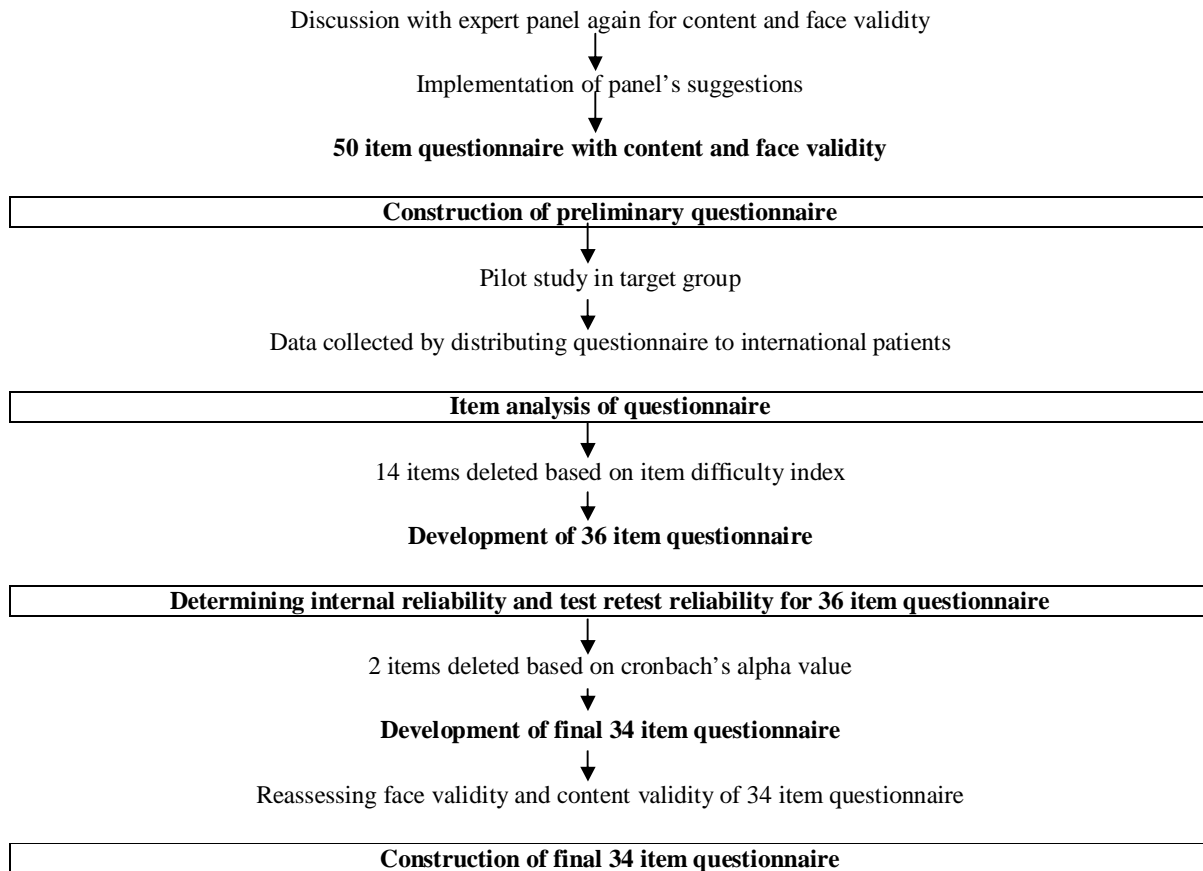
### Step 6 - Reliability of questionnaire

After completing the validity procedures and conducting item analysis the questionnaire was examined to assess its reliability. Reliability refers to the ability of a questionnaire to measure the consistency of an attribute and how well the items correlate and fit together, conceptually.<sup>7,9,16</sup>

6.1 Internal consistency describes 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.<sup>3,10,15</sup> This was calculated for the whole questionnaire i.e. entire scale and individually for the different sections of the questionnaire i.e. subscales.

6.2 SplitHalf reliability measures internal consistency by dividing the scale into two halves which may be first half of the questionnaire versus last half or even items of the questionnaire versus odd items of the questionnaire. Scores of the two halves are then correlated. A high correlation score indicates that the two sets have consistent information which means that if a subject scores high on one set of items he will also score high on second set<sup>9,17</sup>. This shows that the items are measuring the same concept. This was measured using spss software for the questionnaire.





**3. Results**

*3.1. Content Validity*

According to the CVI index, a rating of four or three indicates that the content is valid and is compatible 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 (Devon et al. 2007). Therefore, ten items in the questionnaire were invalid because they yielded CVIs of 3/5=0.6 to 2/5=0.4 and were removed from the questionnaire. All the remaining items were valid with CVIs ranging from 0.8 (4/5) to 1.00 (5/5) and were retained.

*3.2. Face Validity*

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

- Item analysis  
In this process of development of questionnaire, 3 items were answered correctly by more than 80% and 2 items by fewer than 30% of the respondents. So these five items were excluded 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.<sup>12,18</sup> Based on this criteria further ten items were discarded and hence a questionnaire with 36 items was developed.(Tables 1.1, 1.2.)

		N	%
Cases	Valid	59	98.3
	Excluded <sup>a</sup>	1	1.7
	Total	60	100.0

Table 1.1: Case Processing Summary

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Online preoperative counseling facility available	155.1017	281.886	.430	.860
Comparable treatment Indian hospitals provide	155.4237	275.697	.580	.856
online diagnosis facility for post care consultation	155.2542	278.193	.509	.858
Alternative treatment facilities like yoga & kerala ayurveda are available in hospitals	154.8644	288.499	.200	.863
Infrastructure at par with developed countries	154.7288	285.546	.344	.861
Exclusive wings available for int. patients in India	154.5424	285.528	.390	.861
Accommodation for companions of int. patients available in India	156.8644	287.602	<b>.180</b>	.864
Good accommodation facility available	154.8814	295.658	<b>-.024</b>	.867
Techno centric approach to treatment	156.0000	292.103	<b>.053</b>	.867
India has best hospitals with Int. accreditation like gold seal	155.9831	295.948	<b>-.040</b>	.869
Strong pharmacy sector	156.6610	285.090	.284	.862
International cuisines are available for international patients in hospital.	155.1186	285.555	.240	.863
Skilled & expert doctors available in India	154.8475	277.718	.497	.858
Clinical excellence is a key factor for MT	155.3898	276.035	.482	.858
Interpreter facility	155.2034	276.027	.517	.857
Special dietary services available	155.4915	277.185	.485	.858
Good coordination between healthcare & tourism sector	155.6949	275.905	.606	.856
Level of patient service	155.3051	288.905	.214	.863
Quality equipment available	156.1695	281.971	.308	.862
Trained staff available	155.9153	288.113	<b>.161</b>	.865
Connectivity good	155.1017	281.886	.430	.860
Adequate transport facility from leading airports available	155.4237	275.697	.580	.856
Doctors with good communication skill	155.2542	278.193	.509	.858
India is visible	154.8644	288.499	.200	.863
Medical visa facilities are difficult	154.7288	285.546	.344	.861
Specialized procedures available	154.5424	285.528	.390	.861
	156.8644	287.602	<b>.180</b>	.864

Ease of physical movement				
	154.8814	295.658	-.024	.867
Cost affordable				
	156.0000	292.103	<b>.053</b>	.867
Cost of other expenses more				
	155.9831	295.948	<b>-.040</b>	.869
Medical visa available in some countries				
	156.6610	285.090	.284	.862
Economic recession is a boon for MT				
	155.1186	285.555	.240	.863
Privatization of healthcare sector is a boon for MT				
	154.8475	277.718	.497	.858
Factors like air & water pollution is a challenge				
	155.3898	276.035	.482	.858
Medico legal security is provided in India to				
	155.2034	276.027	.517	.857
National health policy has declined Mt				
	155.4915	277.185	.485	.858
Ethical issues are related to MT in India				
	155.6949	275.905	.606	.856
Agreement with insurance companies				
	155.3051	288.905	.214	.863
A hassle free disengagement from follow up is there				
	156.1695	281.971	.308	.862
Police verification is a challenge				
	155.9153	288.113	<b>.161</b>	.865
Medical visa id costlier than tourist visa in India				
	155.2034	276.027	.517	.857
Extension of medical visa take time				
	155.4915	277.185	.485	.858
Two month cooling period is required				
	155.6949	275.905	.606	.856
Cost of medical visa is inhibitive				
	155.3051	288.905	.214	.863
Political stability in India promotes MT				
	156.1695	281.971	.308	.862
Corruption in visa				

Table 1.2: Item-Total Statistics

Spss output for item analysis for 45 item questionnaire (corrected interitem correlation values). Values less than 0.2 were discarded.

### 3.3. Internal Reliability

Reliability coefficient was calculated for the questionnaire after item analysis was computed. It was done by analyzing reliability through cronbach's alpha with spss and was 0.89 which shows that there was a high correlation between different items of the questionnaire and is consistently reliable. Now the questionnaire contained 36 items (Tables 2.1, 2.2.). Further two items were discarded from the questionnaire on the basis of spss results cronbach's alpha if item deleted. This raised the reliability coefficient to 0.902 which is considered to be a very good and ideal alpha value for the questionnaire and hence a questionnaire with 34 items was developed (Tables 3.1 and 3.2, 3.3). Reliability coefficient of individual sections of questionnaire or different subscales were also calculated. For section one consisting of eight items i.e Quality of treatment and care alpha was 0.735 (Tables 4.1, 4.2, 4.3). For second section i.e Availability of experts alpha was 0.664 (Tables 5.1, 5.2, 5.3), for third section i.e Ease of access and cost of treatment alpha calculated was 0.748 (Tables 6.1, 6.2, 6.3). Similarly for fourth and fifth sections i.e Political, economic and other factors and Visa related issues cronbach's alpha values were 0.713 and 0.637 (Tables 7.1, 7.2, 7.3, 8.1, 8.2, 8.3)

Cronbach's Alpha	N of Items
.890	36

Table 2.1: Reliability Statistics

spss output. Cronbach's alpha value after item analysis for 36 item questionnaire

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Online preoperative counseling facility available	127.2203	252.554	.373	.888
Comparable treatment	127.5424	245.425	.570	.884
Indian hospitals provide online diagnosis facility for post care consultation	127.3729	250.100	.421	.887
Alternative treatment facilities like yoga & kerala ayurveda are available in hospitals	126.9831	260.465	.089	.892
Infrastructure at par with developed countries	126.8475	256.235	.273	.889
Exclusive wings available for int. patients in India	126.6610	255.573	.339	.888
Strong pharmacy sector	128.7797	254.899	.254	.890
tie-ups with insurance providers	127.2373	250.598	.352	.888
Skilled & expert doctors available in India	126.9661	243.688	.605	.883
Interpreter facility	127.3220	241.705	.632	.883
Special dietary services available	127.6102	245.035	.530	.885
Good coordination between healthcare & tourism sector	127.8136	244.120	.649	.883
Level of patient service	127.4237	255.628	.288	.889
Quality equipment available	128.2881	252.036	.280	.890
Clinical excellence is a key factor for mt	127.5085	242.220	.575	.884
Connectivity good	127.2203	252.554	.373	.888
Adequate transport facility from leading airports available	127.5424	245.425	.570	.884
Doctors with good communication skill	127.3729	250.100	.421	.887
Medical visa facilities are difficult	126.8475	256.235	.273	.889
Specialized procedures available	126.6610	255.573	.339	.888
Cost affordable	127.0000	266.207	-.110	.894
Cost of other expenses more	128.1186	266.141	-.092	.897
Economic recession is a boon for MT	128.7797	254.899	.254	.890
Privatization of healthcare sector is a boon for MT	127.2373	250.598	.352	.888
Factors like air & water pollution is a challenge	126.9661	243.688	.605	.883
Medico legal security is provided in India to	127.5085	242.220	.575	.884
National health policy has declined Mt	127.3220	241.705	.632	.883
Ethical issues are related to MT in India	127.6102	245.035	.530	.885
Agreement with insurance companies	127.8136	244.120	.649	.883
A hassle free disengagement from follow up is there	127.4237	255.628	.288	.889
Police verification is a challenge	128.2881	252.036	.280	.890
Extension of medical visa take time	127.3220	241.705	.632	.883
Two month cooling period is required	127.6102	245.035	.530	.885
Cost to medical visa is inhibitive	127.8136	244.120	.649	.883
Political stability in India promotes MT	127.4237	255.628	.288	.889
Corruption in visa	128.2881	252.036	.280	.890

Table 2.2: Item-Total Statistics

spss output. Item total Statistics for 36 item questionnaire

		N	%
Cases	Valid	59	98.3
	Excluded <sup>a</sup>	1	1.7
	Total	60	100.0

spss output. Cronbach's alpha value after item analysis for 34 item questionnaire

Table 3.1: Case Processing Summary

Cronbach's Alpha	N of Items
.902	34

Table 3.2: Reliability Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Online preoperative counseling facility available	120.0678	257.788	.363	.900
Comparable treatment	120.3898	250.276	.571	.897
Indian hospitals provide online diagnosis facility for post care consultation	120.2203	256.106	.386	.900
Alternative treatment facilities like yoga & Kerala ayurveda are available in hospitals	119.8305	266.385	.060	.905
Infrastructure at par with developed countries	119.6949	261.940	.246	.902
Exclusive wings available for int. patients in India	119.5085	260.909	.324	.901
Strong pharmacy sector	121.6271	259.376	.271	.902
International cuisines are available for medical tourists in hospitals.	120.0847	255.355	.358	.901
Skilled & expert doctors available in India	119.8136	248.361	.611	.896
Interpreter facility	120.1695	245.695	.659	.895
Special dietary services available	120.4576	250.218	.521	.898
Good coordination between healthcare & tourism sector	120.6610	248.814	.655	.896
Level of patient service	120.2712	259.856	.317	.901
Quality equipment available	121.1356	256.430	.295	.902
Clinical excellence is a key factor for mt	120.3559	246.785	.584	.896
Connectivity good	120.0678	257.788	.363	.900
Adequate transport facility from	120.3898	250.276	.571	.897



leading airports available				
Doctors with good communication skill	120.2203	256.106	.386	.900
Medical visa facilities are difficult	119.6949	261.940	.246	.902
Specialized procedures available	119.5085	260.909	.324	.901
Economic recession is a boon for MT	121.6271	259.376	.271	.902
Privatization of healthcare sector is a boon for MT	120.0847	255.355	.358	.901
Factors like air & water pollution is a challenge	119.8136	248.361	.611	.896
Medicolegal security is provided in India to	120.3559	246.785	.584	.896
National health policy has declined Mt	120.1695	245.695	.659	.895
Ethical issues are related to MT in India	120.4576	250.218	.521	.898
Agreement with insurance companies	120.6610	248.814	.655	.896
A hassle free disengagement from follow up is there	120.2712	259.856	.317	.901
Police verification is a challenge	121.1356	256.430	.295	.902
Extension of medical visa take time	120.1695	245.695	.659	.895
Two month cooling period is required	120.4576	250.218	.521	.898
Cost of medical visa is inhibitive	120.6610	248.814	.655	.896
Political stability in India promotes MT	120.2712	259.856	.317	.901
Corruption in visa	121.1356	256.430	.295	.902

Table 3.3: Item-Total Statistics

spss output. Item total Statistics for 34 item questionnaire

- Internal Reliability of different sections of questionnaire
- Section - 1

Mean	Variance	Std. Deviation	N of Items
30.2500	17.818	4.22111	8

*Table 4.1: Scale Statistics (section 1)*

		N	%
Cases	Valid	60	100.0
	Excluded <sup>a</sup>	0	.0
	Total	60	100.0

*Table 4.2: Case Processing Summary*

Cronbach's Alpha	N of Items
.735	8

*Table 4.3: Reliability statistics*

Table 4: SPSS output. Cronbach's alpha value for section 1 (Quality of treatment and care)

- Section - 2

Mean	Variance	Std. Deviation	N of Items
26.1667	17.395	4.17079	7

*Table 5.1: Scale Statistics (section 2)*

		N	%
Cases	Valid	60	100.0
	Excluded <sup>a</sup>	0	.0
	Total	60	100.0

*Table 5.2: Case Processing Summary*

Cronbach's Alpha	N of Items
.664	7

*Table 5.3: Reliability statistics*

Table 5: SPSS output. Cronbach's alpha value for section 2 (Availability of experts)

- Section – 3

Mean	Variance	Std. Deviation	N of Items
17.8500	10.367	3.21977	5

*Table 6.1: Scale Statistics (section 3)*

		N	%
Cases	Valid	60	100.0
	Excluded <sup>a</sup>	0	.0
	Total	60	100.0

*Table 6.2: Case Processing Summary*

Cronbach's Alpha	N of Items
.748	5

*Table 6.3: Reliability Statistics*

Table 6: SPSS output. Cronbach's alpha value for section 3 (Ease of assess & cost of treatment)

- Section - 4

Mean	Variance	Std. Deviation	N of Items
27.9492	23.773	4.87578	8

*Table 7.1: Scale Statistics (section 4)*

		N	%
Cases	Valid	59	98.3
	Excluded <sup>a</sup>	1	1.7
	Total	60	100.0

*Table 7.2 Case Processing Summary*

Cronbach's Alpha	N of Items
.713	8

*Table 7.3: Reliability Statistics*

Table 7: SPSS output. Cronbach's alpha value for section 4 (Political, economic and other factors)

- Section – 5

Mean	Variance	Std. Deviation	N of Items
16.6102	12.001	3.46419	5

*Table 8.1: Scale Statistics (section 5)*

		N	%
Cases	Valid	60	100.0
	Excluded <sup>a</sup>	0	.0
	Total	60	100.0

*Table 8.2: Case Processing Summary*

Cronbach's Alpha	N of Items
.637	5

*Table 8.3: Reliability Statistics*

Table 8: SPSS output. Cronbach's alpha value for section 5 (Visa related issues)

3.4. Split half Reliability (SPSS Output)

SPSS software was used to estimate split half reliability of the questionnaire consisting of 34 items. Correlation between two halves was 0.865 which indicates high degree of correlation between two halves of the questionnaire. Spearman-Brown coefficient calculated was 0.928 and Guttman Split half coefficient was 0.916 which clearly shows that the two halves of the questionnaire provided consistent information.

Case Processing Summary			
		N	%
Cases	Valid	59	98.3
	Excluded <sup>a</sup>	1	1.7

Reliability Statistics			
Cronbach's Alpha	Part 1	Value	.802
		N of Items	17 <sup>a</sup>
	Part 2	Value	.827
		N of Items	17 <sup>b</sup>
Total N of Items			34
Correlation Between Forms			.865
Spearman-Brown Coefficient	Equal Length		.928
	Unequal Length		.928
Guttman Split-Half Coefficient			.926

- The items are: Online preoperative counseling facility available, Comparable treatment, Indian hospitals provide online diagnosis facility for post care consultation, Alternative treatment facilities like yoga & kerala ayurveda are available in hospitals, Infrastructure at par with developed countries, Exclusive wings available for int. patients in India, Strong pharmacy sector, tie-ups with insurance providers, Skilled & expert doctors available in India, Interpreter facility, Special dietary services available, Good coordination between healthcare & tourism sector, Level of patient service, Quality equipment available, Clinical excellence is a key factor for mt, Connectivity good, Adequate transport facility from leading airports available.
- The items are: Doctors with good communication skill, Medical visa facilities are difficult, Specialized procedures available, Economic recession is a boon for MT, Privatization of healthcare sector is a boon for MT, Factors like air & water pollution is a challenge, Medico legal security is provided in India to , National health policy has declined Mt, Ethical issues are related to MT in India, Agreement with insurance companies, A hassle free disengagement from follow up is there, Police verification is a challenge, Extension of medical visa take time, Two month cooling period is required, Cost to medical visa is inhibitive, Political stability in India promotes MT, Corruption in visa.

#### 4. Discussion

In this study, special attention was paid to the development of questionnaire addressing international patient's perspective of globalization of health in context to India. Main priority during the whole study was to ensure validity and reliability of the questionnaire. Every draft of the questionnaire was reviewed by panel of experts so as to ensure face and content validity and to select best items in terms of accuracy, clarity and representativeness of items. Certain items were discarded and some new items were added depending upon the recommendations of the experts. In this study adequate efforts were taken to ensure face validity of questionnaire which was done by including and analyzing the discussion of all questions and answers with experts and the respondents so that they can comment on design and impact of questionnaire.<sup>1</sup> Face validity helped to provide important concepts about operationalisation of the questionnaire by international patients considering India for medical procedures. Content validity provided the information that content was relevant to the concept of globalization in context to India. The questionnaire was divided into five sections which provides 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: Split-Half reliability and Cronbach's alpha.<sup>5</sup> Cronbach's alpha calculated for the questionnaire and it was 0.902 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 opinions about ideal Cronbach's alpha value. One opinion is that alpha should be at least 0.90 for instruments which are used in clinical settings.<sup>14</sup> Other opinion is that an alpha of 0.70 is acceptable for the new instrument.<sup>5,6</sup> In this study, alpha computed for the entire questionnaire was 0.902 which is pretty good for new instrument. If an instrument consists of two or more than two subscales alpha should be computed for the entire scale as well as for the subscales.<sup>5,14</sup> Since the questionnaire consists of five subscales and therefore Cronbach's alpha was calculated for the five subscales. Alpha calculated for three subscales were more than 0.7 but for subscale two i.e Availability of experts and subscale five i.e Visa related issues alpha was found to be 0.664 and 0.637 which did not meet the score of 0.7. (Table 9) Internal consistency was highest for third section i.e Ease of access and cost of treatment and also for overall scale. (0.902)

Internal consistency in pilot study for different subscales (Table 9)

Subscales	Cronbach's alpha
1. Quality of treatment and care	0.735
2. Availability of experts	0.664
3. Ease of access and cost of treatment	0.748
4. Political and economic factors	0.713
5. Visa related issues	0.637

Table 9

In present study, although two subscales could not reach internal consistency criteria of 0.7 but were close to specified value were retained for the sake of content validity after consultation with experts. Retaining items 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 suggested that it is important to retain these items so as to test the essentials components of the questionnaire.<sup>20</sup> Split half reliability calculated by Guttman split half coefficient with spss software was 0.928 which indicates that the two halves of the questionnaire provided consistent information. Correlation score between the two halves of the questionnaire was calculated to be 0.865 which was fairly good correlation score indicating that there existed a high degree of correlation between the two halves of the questionnaire.

**5. Conclusion and implications**

This questionnaire was designed to assess the attitude of international patients addressing their perspective towards globalization of health in context to India. It has been designed to find out the reasons why International patients have chosen India as a destination for medical procedures, what are the opportunities available in India as far as medical tourism is concerned and what can be the challenges India is facing in this sector. This questionnaire had good content and face validities, excellent reliability and should provide a useful tool for measuring attitude of international patients towards India as a favorable destination in terms of medical tourism. In order to strengthen the rigor of the questionnaire for future research, it is recommended that convergent and discriminant validity can be undertaken to access the similarities and differences of questionnaire with other available tools measuring identical concepts. Confirmatory factor analysis can be carried out to improve the generalizability of the questionnaire. However we believe that this questionnaire is a valid and reliable tool to measure the perspective of international patients who have chosen Indian hospitals for medical procedures.

**6. Information Sheet & Consent Form**

Participant Identification Number:

<b>Title of study:</b>
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Name of Researcher:

1. I agree to take part in the research study named above.
2. The nature and possible effects of the study have been explained to me.
3. I understand that the study involves evaluation of the past, present and future scenario of Indian health tourism market to study the effects of globalization of health on existing Indian healthcare system.
4. I understand that any information given by me may be used in future reports, articles or presentations by the researcher.
5. I have spoken to the researcher and understand that my involvement will involve being interviewed at a time and place to suit me and I have had opportunity to ask questions.
6. I understand that the researcher(s) will maintain confidentiality and that any information I supply to the researcher(s) will be used only for the purposes of the research.
7. I understand that my participation is voluntary and that I may withdraw at any time without any effect.

Participant’s name: \_\_\_\_\_ Date: \_\_\_\_\_ Signature \_\_\_\_\_

Contact address & Phone no. \_\_\_\_\_

Name of Hospital: \_\_\_\_\_

<b>Statement by Researcher</b>	
	I have explained the project and the implications of participation in it to this volunteer and I believe that the consent is informed and that he/she understands the implications of participation.
Researcher’s name: _____	Date: _____
Researcher’s signature: _____	

**7. Questionnaire**

Globalization of health (Patient’s perspective)

First name-

Last name

E-mail-

Phone no-

Address-

Hospital-

**Section-1****Quality of Treatment & Care****1. Treatment provided in Indian hospital is comparable to any other destination in developed countries.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**2. Indian hospitals provide facility of online diagnosis especially for post care and future consultations.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**3. Alternative treatment like yoga & Kerala ayurveda are available in India.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

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

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**5. Online preoperative counseling session facility with doctor is available in India.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**6. There are exclusive wings for medical tourists in Indian hospitals.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**7. Indian hospitals have strong pharmacy sector with worldwide recognition.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**8. Level of customer or patient service to foreign tourist is not at par with that of developed countries.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**Section -2****Availability of Experts****1. Highly skilled and expert doctors are available in Hospitals in India.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**2. Translator/ interpreter facility for international patients is readily available in Hospitals in India.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**3. Special and expert dietary services are available for International patients in hospitals in India.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**4. Arrangement of international cuisines is there for medical tourists in Indian hospitals.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**5. All the specialized procedures are available in Indian hospitals for international patients.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**6. Clinical excellence in Indian hospital is a key growth driver for Medical Tourism for India.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**7. Best technology and quality equipment is available in Indian hospitals which are compatible with those of developing countries.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**Section -3****Ease of Access & cost of treatment****1. Adequate transport system from leading airports to hospitals is available in India.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**2. Connectivity to India is very good from other countries.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**3. There is a good coordination between healthcare sector and tourism sector.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**4. Cost of other expenses besides the direct cost of medical procedures is relatively less as compared to other countries.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**5. Agreement with medical insurance companies and overseas government has facilitated medical tourism for India.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**6. A hassle free disengagement from procedure including clear follow up instructions and settlement of bills is there in Indian Hospitals.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**Section-4****Political Economic & other factors****1. Political stability in India is a key growth driver for Globalization of Health.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**2. Recent economic recession is a boon for Indian health-care system in lieu of Globalization of Health.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**3. Privatization of healthcare sector in India a boon for Globalization of health.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**4. Medico legal securities are provided to international Patients coming to India for treatment.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**5. National health policy and revenue in India has facilitated Medical tourism.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**6. Factors like air and water pollution are biggest challenges for medical tourism in India.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**7. Ethical issues are related to Globalization of Health in India.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**8. Police verification clause for international patients is a challenge for globalization of health.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**Section -5****Visa related issues****1. Medical Visa is costlier and cumbersome as compared to tourist visa in India.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**2. Cost of medical visa is inhibitive. It is almost twice the cost of tourist visa.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**3. There is corruption in grant of medical visa in India.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**4. Extension of medical Visa takes time in India.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

**5. A minimum of two months cooling period is required for reentry on a medical visa which is restricted to three entries a year.**

Strongly Disagree   Disagree   Undecided   Agree   Strongly Agree

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