MEDICAL TOURISM IN KOLKATA: A STUDY BASED ON PERCEPTION OF INTERNATIONAL PATIENTS IN PRIVATE SECTOR HOSPITALS

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Abstract: The rising cost of healthcare in developed countries, low cost of treatment and reducing travel fares in developing countries gave birth to Medical Tourism. In Asia, India is considered to be one of the best destinations for medical tourism due to adequate availability of specialised doctors and world-class facility of medical treatment along with world-famous exotic tourist attractions. Kolkata, among other metro cities in India, has been growing as a medical tourism destination due to the advantageous location and modern facilities provided to the foreign as well as domestic patients at an extremely affordable price. This paper attempts to make a study on perceptions of international patients in private hospitals in Kolkata based on their experience that may, in turn, influence further growth of medical tourism there.

Indexed Terms – Medical Tourism in Kolkata, Healthcare, Perception of international patients.

I. INTRODUCTION

Most of the countries of the world are exploring the benefits of medical tourism by offering a wide range of medical, surgical, and dental services. In Asia as well as in the world, India, Malaysia, Singapore and Thailand are the four major tourism destinations where this very tourism has been increasing rapidly. Among them, India is the most favourable destination for international patients due to availability of specialised team of doctors and world-class medical treatment along with world-famous exotic tourist attractions.

Kolkata, one of the four metros in India, is slowly but surely developing a place for medical tourism from rest of India as well as from South Asian Association for Regional Cooperation Nations, Middle East, United Kingdom and African Countries. Here super specialty-hospitals are also getting prepared to cope with the rising demand of medical tourism. Kolkata, the capital of West Bengal is emerging as a favourite destination for medical tourism owing to the advantageous location and world-class facilities provided to the foreign patients as well as domestic at an extremely affordable price.

II. LITERATURE REVIEW

A brief literature review of the study is discussed in the following paragraph.

Leigh Turner (2007) pointed out that with globalisation; large numbers of foreign patients are leaving their home country in search of medical treatment due to cost effectiveness in healthcare to other countries.

Dr. R. Kumar (2008) has observed in his book "Medical Tourism in India: Management and Promotion" that India is one of the best places for the medical treatment and it is well known for heart surgery, joint surgery, eye surgery and others.

Mr. T. Gnanavel (2008) explained in his book "Health Tourism" that Kolkata may soon became Asia's largest integrated "Healthcare City" spread over 800 acres with an estimated investment of 20,000 crore. The proposed healthcity, as per initial plan, will have 100 hospitals with a capacity of 50,000 beds.

Rahul Dutta (2018) wrote in Bartaman, a Bengali daily that NATMO identified Kolkata as a medical tourism place for the international medical patients from Bangladesh, Nepal, Bhutan, Myanmar, Nigeria, Pakistan and the countries from Middle East.

III. OBJECTIVE OF THE STUDY

The focal objective of the present study is to evaluate the perception of international patients of private sector hospitals in Kolkata. More specifically, the study focuses on the following points:

- To identify the important factors responsible for genesis and growth of medical tourism in Kolkata.
- To highlight the relationship among the factors and independent variables.
- To identify the ways and means for further improvement of the sector.

IV. METHODOLOGY

The data and information had been collected from both primary and secondary sources. The study is related to 10 private hospitals offering medical tourism facilities in Kolkata where international patients come for treatment. A questionnaire comprising 12 questions regarding medical tourism in Kolkata was circulated among 250 international patients and their responses were noted. There were 11 independent variables and 1 (one) dependent variable in the questionnaire. The respondents were requested to rank their responses on 5 point Likert Scale with scores 1, 2, 3, 4, 5 for strongly disagree, disagree, neutral, agree and strongly agree categories respectively. The interviews were taken during the second and third quarters of 2018. The data generated from the responses were duly analysed and interpreted using Statistical Package for Social Science (Version 20), and then some logical inference has been drawn.

V. ANALYSIS OF THE RESULTS OBTAINED

A statistical analysis of the data obtained, have been carried out as follows.

5.1 Descriptive Statistics

Table-1

Descriptive Statistics

Variables	Mean	Std. Deviation
VAR00001: Medical treatment cost is cheaper in concerned hospital.	3.5520	1.06009
VAR00002: Accreditation comes first.	4.9360	.30376
VAR00003: Safety is important in concerned hospital.	4.9680	.17635
VAR00004: Quality standard is essential in medical treatment	4.9520	.26453
VAR00005: Transparency in medical billing in concerned hospital	4.7960	.48510
VAR00006: Post treatment procedure in concerned hospital	4.2360	.79425
VAR00007: Doctors have adequate communication skills and they are very competent and well trained.	4.8520	.39841
VAR00008: Nurses have adequate communication skills and they are very competent and well trained.	4.3080	.79477
VAR00009: Attendants have adequate communication skills and they are very competent and well trained.	3.9000	.94953
VAR00010: Arrangement of expert interpreters by concerned hospital.	3.0800	.38234
VAR00011: Attitude and behaviour of medical professionals.	4.5600	.63246
VAR00012: Perception on Medical Tourism in Kolkata.	4.4640	.56744
No. of population=250		

Source: Primary Data. Results computed.

Table-1 shows that out of 12 variables, 9 variables have the mean values more than 4 whereas only 3 variables have the mean value less than 4. Thus, it may be concluded that almost all of the international patients strongly agree with the medical tourism in Kolkata and there is a prospect of medical tourism in Kolkata.

5.2 Normality Test

Before going to factor analysis and multiple regression analysis, normality test was carried out to all independent variables included in the factors. For normality checking, One Sample Kolmogorov-Smirnov Test is applied. As per this test, all variables are significant as the p-values are less than the significance level of 0.05. The decision is to reject the null hypothesis and thus, all the variables follow normal distribution.

5.3 Exploratory Factor Analysis

Exploratory factor analysis has been carried out to find out the important factors having maximum variation by applying Principal Component Extraction Method. Communalities of each question, Eigen values and percentage of variance of the factors have been calculated as under.

Table-2

Exploratory Factor Analysis Statistics

Rotated Component Matrix[a]				Communalities
Variables	Component			
	1	2	3	
Safety at hospital VAR00003	.922			.859
Quality standard of hospital VAR00004	.904			.834
Accreditation for hospitals VAR00002	.866			.757
Attitude of medical professionals.VAR00011		.771		.607
Well trained and skilled attendants.VAR00009		.750		.649
Well trained and skilled nurses. VAR00008		.726		.618
Transparency in medical bill of the hospital.VAR00005			.757	.636
Eigen values	3.386	2.050	1.185	
% of variance	28.218	17.085	9.875	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 4 iterations.

Source: Primary Data. Results computed.

Factor analysis has been exhibited at Table-2 that three factors, having Eigen value is greater than 1, were considered. First factor has the maximum variance and so on. The factor extraction with factor loading has been exhibited below along with the percentages of variance with corresponding questions in the questionnaire sheet.

Table-3

Factors Loadings Based on Factor Analysis

Factors	% of Variance	Factor Interpretation	Variables Included in the Factor	Loadings
F1	28.218	Basic requirements (Var 3,4,2)	•Safety at hospital •Quality standard of hospital •Accreditation for hospitals	.922 .904 .866
F2	17.085	Primary hospital resources (Var 11,9,8)	•Attitude of medical professionals. •Well trained and skilled attendants. •Well trained and skilled nurses.	.771 .750 .726
F3	9.875	Transparency in medical bill (Var 5)	•Transparency in medical billing of the hospital.	.757

Source: Primary Data. Results computed.

Table-3 shows that the first factor i.e., basic requirements, has three variables viz., safety at hospital, quality of standard of hospital and accreditation for hospitals and this factor possesses maximum of variance of 28.218%. Second factor i.e., primary hospital resources, has three variables viz., attitude of medical professionals, well trained & skilled attendants and well trained & skilled nurses, having variance of 17.085%, where as third factor has only one variable viz., transparency in medical billing and this factor possesses minimum variance of 9.875%.

5.4 Multiple Regression Analysis

A Multiple Regression Analysis has been done to highlight the relationship between factors and independent variables.

Table-4

Multiple Regression Analysis between Factor 1 and Independent Variables

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-11.957	.575		-20.806	.000		
	VAR00001	.192	.023	.203	8.218	.000	.918	1.090
	VAR00002	2.489	.085	.756	29.362	.000	.847	1.181
	VAR00005	.108	.051	.053	2.127	.034	.920	1.087
	VAR00006	.157	.031	.124	5.129	.000	.955	1.047
	VAR00007	-.225	.065	-.090	-3.482	.001	.848	1.180
	VAR00008	.121	.040	.097	3.009	.003	.546	1.833
	VAR00009	.124	.034	.118	3.614	.000	.527	1.897
	VAR00010	-.228	.065	-.087	-3.519	.001	.912	1.096
	VAR00011	-.308	.045	-.195	-6.917	.000	.708	1.413
R=.930		R^2=.865	Adjusted R^2 = .860		Std. errors of the estimate= .37393638			
Durbin-Watson= 1.390					F statistics= 171.195 (Prob. .000)			
a. Predictors: (Constant), VAR00011, VAR00002, VAR00006, VAR00005, VAR00001, VAR00010, VAR00007, VAR00008, VAR00009								
b. Dependent Variable: REGR factor score 1 for analysis 1								

Source: Primary Data. Results computed.

Table-4 discloses the result of regression analysis that has been carried out between Factor 1 and independent variables. Variance Inflation Factor values within 2 have been accepted. Coefficients exhibit that all variables have low significant value of less than 0.05. In other words, it may be assumed that all these variables have positive relationship with Factor 1. R is the multiple correlation coefficient and its value must be between -1 and +1. Here the value of R is 0.930 which is between -1 and +1 and thus, there is a close relationship between Factor 1 and independent variables. R squared is the coefficient of determination and its value is 0.865 which is within 0 and 1. So it may be assumed that 87% of the variation in Factor 1 is explained by independent variables. Also, the Factor 1 is more reliable as F value is significant.

Table-5

Multiple Regression Analysis between Factor 2 and Independent Variables

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-9.522	.299		-31.861	.000		
	VAR00001	.045	.012	.048	3.702	.000	.918	1.090
	VAR00002	-.375	.044	-.114	-8.509	.000	.847	1.181
	VAR00005	.170	.026	.082	6.416	.000	.920	1.087
	VAR00006	.112	.016	.089	7.066	.000	.955	1.047
	VAR00007	.675	.034	.269	20.083	.000	.848	1.180
	VAR00008	.364	.021	.289	17.329	.000	.546	1.833
	VAR00009	.314	.018	.298	17.558	.000	.527	1.897
	VAR00010	.306	.034	.117	9.081	.000	.912	1.096

	VAR00011	.639	.023	.404	27.597	.000	.708	1.413
R=.982		R^2=.964	Adjusted R^2 = .962		Std. errors of the estimate= .19446610			
Durbin-Watson= 1.533					F statistics= 704.925 (Prob. .000)			
a. Predictors: (Constant), VAR00011, VAR00002, VAR00006, VAR00005, VAR00001, VAR00010, VAR00007, VAR00008, VAR00009								
b. Dependent Variable: REGR factor score 2 for analysis 1								

Source: Primary Data. Results computed.

From Table-5, it can be seen that all variables are significant and their values are less than 0.05. All these variables have positive relationship with Factor 2. R is the multiple correlation coefficient and its value is 0.982 being between -1 and +1. So, there is a close relationship between Factor 2 and all independent variables. R squared value is 0.964 which is between 0 and 1. So it may be assumed that 96% of the variation in Factor 2 is explained by independent variables and the Factor 2 is more reliable as F value is significant.

Table-6

Multiple Regression Analysis between Factor 3 and Independent Variables

Coefficients[a]								
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**	**Collinearity Statistics**	
		B	**Std. Error**	**Beta**			**Tolerance**	**VIF**
1	(Constant)	-2.477	.601		-4.121	.000		
	VAR00001	-.025	.024	-.027	-1.033	.303	.918	1.090
	VAR00002	-.155	.089	-.047	-1.752	.081	.847	1.181
	VAR00005	1.454	.053	.706	27.305	.000	.920	1.087
	VAR00006	-.406	.032	-.322	-12.717	.000	.955	1.047
	VAR00007	.196	.068	.078	2.898	.004	.848	1.180
	VAR00008	-.074	.042	-.059	-1.753	.081	.546	1.833
	VAR00009	-.219	.036	-.208	-6.082	.000	.527	1.897
	VAR00010	-.905	.068	-.346	-13.330	.000	.912	1.096
	VAR00011	.238	.047	.150	5.105	.000	.708	1.413
R=.923		R^2=.853	Adjusted R^2 = .847		Std. errors of the estimate= .39099873			
Durbin-Watson= 1.549					F statistics= 154.303 (Prob. .000)			
a. Predictors: (Constant), VAR00011, VAR00002, VAR00006, VAR00005, VAR00001, VAR00010, VAR00007, VAR00008, VAR00009								
b. Dependent Variable: REGR factor score 3 for analysis 1								

Source: Primary Data. Results computed.

In Table-6, regression analysis has been done between Factor 3 and independent variables. Coefficients exhibit that almost all variables have low significant value of less than 0.05. It also denotes that all these variables have positive relationships with Factor 3 and the VAR00001, VAR00002 and VAR00008 have negative impact with Factor 3 as they are not significant and the values are more than 0.05. R, the multiple correlation coefficient, is 0.923 which is between -1 and +1 and thus there is a close relationship between Factor 3 and independent variables. R squared value is 0.853 which is between 0 and 1. It means that 85% of the variation in Factor 3 is explained by independent variables. Here, F value is significant and so the Factor 3 is more reliable.

VI. FINDINGS

The findings, as summarised on the basis of analysis carried out above, are stated below:

- Descriptive statistics discloses that almost all variables out of 12 variables have the mean values more than 4, except three variables viz., "VAR00001: medical treatment cost is cheaper in concerned hospital, VAR00009: attendants have adequate communication skills and they are very competent and well trained and VAR00010: arrangement of expert interpreters by concerned hospital", having the mean value less than 4. It means that almost all of the international patients strongly agree with the medical tourism in Kolkata and there is a prospect of medical tourism in Kolkata. Standard deviation of all variables is acceptable except three variables, viz., "VAR00001: medical treatment cost is cheaper in concerned hospital, VAR00006: post treatment procedure in the concerned hospital, VAR00008: nurses have adequate communication skills and they are very competent and well trained, VAR00009: attendants have adequate communication skills and they are very competent and well trained".
- Exploratory factor analysis shows that important variables responsible for prospects of medical tourism in Kolkata have been grouped in to three Factors having Eigen value is one or greater than one. First factor, basic requirements, has three variables viz., VAR00003: safety is important in concerned hospital, VAR00004: quality standard is essential in medical treatment and VAR00002: accreditation for hospitals and this factor possesses maximum of variance of 28.218%. Second factor, primary hospital resources, has three variables viz., VAR00011: attitude of medical professionals, VAR00009: attendants have adequate communication skills and they are very competent and VAR00008: nurses have adequate communication skills and they are very competent and well trained, having variance of 17.085%, where as third factor has only one variable namely, VAR00005: transparency in medical billing in hospital and this factor possesses minimum variance of 9.875%.
- Regression analysis between Factor 1 and independent variables, coefficient exhibits that all variables have positive relationship with Factor 1. Multiple correlations coefficient shows that there is a close relationship between Factor 1 and independent variables. Factor 1 is more reliable as F value is significant. Regression analysis between Factor 2 and independent variables and Regression analysis

between Factor 3 and independent variables also show the same result of regression analysis between Factor 1 and independent variables.

VII. RECOMMENDATIONS

Based on the findings as mentioned above, the following recommendations are made:

- As per descriptive statistics, perception of international patients about the three variables is alarming as their standard deviations are high and they are very spread out from the mean. This is evident in case of VAR00001: medical treatment cost in the concerned hospital, VAR00006: post treatment procedure in the concerned hospital, VAR00008: competence, training and communication skill of nurses, and VAR00009: competence, training and communication skill of attendants. The hospital authority should look into and investigate this matter.
- Out of the three Factors, the first Factor "basic requirements" with highest percentage of variance of 28.218% is a crucial element. It is advisable that hospital authorities should emphasise more on the three variables such as safety at hospital, quality standard and accreditation of hospitals. Also, the second Factor "primary hospital resources" is a moderately worrying element with 17.085% of variance where and the third Factor possesses minimum variance of 9.875%. Hospital authority must pay attention on three variables of Factor 2, viz., attitude of medical professionals, competence, training and communication skill of attendants and competence, training and communication skill of nurses and on variable of Factor 3, viz., transparency in medical billing in hospital.

VIII. CONCLUSION

Kolkata has been developing as a medical tourism destination and both domestic and international patients have been coming to avail themselves of high quality medical facilities at an affordable price. The city has every possibility of further establishing itself as a hub of international medical tourism in near future. But this will happen only when the foreign patients' positive perception will be an antecedent factor of their satisfaction regarding medical tourism infrastructure and super-speciality facilities.

IX. REFERENCES

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