

Medical Tourism in Guwahati: A Study of Patients' Perspectives and Referral Intentions

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ABSTRACT

Medical tourism has emerged as an important component of the healthcare and tourism industries, particularly in developing countries such as India, where affordable and quality healthcare services attract a large number of patients. In recent years, Guwahati has gradually developed as a significant healthcare destination in Northeast India due to the presence of advanced medical facilities, multispecialty hospitals, and improved regional connectivity. The present study aims to examine patients' perspectives on the prospects and challenges of medical tourism in Guwahati and assess their willingness to recommend the city to friends and relatives for medical purposes.

The study is based on primary data collected from patients visiting Gauhati Medical College and Hospital (GMCH) and Nemcare Hospital. A structured questionnaire based on Likert scale statements was used for data collection. The study adopts a descriptive research design, and statistical tools such as percentage analysis, mean score analysis, correlation analysis, chi-square test, and Mann-Whitney U test were proposed for data interpretation.

The findings of the study are expected to provide insights into patients' perceptions regarding healthcare quality, affordability, infrastructure, accessibility, and support services associated with medical tourism in Guwahati. The study may also help identify factors influencing patients' referral intentions and contribute to improving healthcare and tourism-related services in the region. The research highlights the growing importance of Guwahati as an emerging medical tourism destination in Northeast India.

Keywords: Medical Tourism, Patient Perspectives, Referral Intentions, Healthcare Services.

INTRODUCTION

Medical tourism refers to the movement of individuals from one place to another to obtain medical treatment, healthcare services, or wellness-related procedures. In recent decades, medical tourism has become an important global phenomenon due to increasing healthcare costs, long waiting periods, and inadequate medical facilities in many regions. Countries such as India, Thailand, Singapore, and Malaysia have gained prominence in medical tourism because they provide comparatively affordable and quality healthcare services (Chaudhary et al., 2015; Connell, 2013).

India has emerged as one of the major destinations for medical tourism because of its highly qualified healthcare professionals, advanced medical technologies, affordable treatment costs, and internationally recognized hospitals. Metropolitan cities such as Delhi, Chennai, Mumbai, and Bengaluru have traditionally dominated India's medical tourism sector. However, regional healthcare hubs are also gaining importance (Shankar, 2023).

Guwahati, the gateway to Northeast India, has increasingly developed into an important healthcare destination for patients from neighboring northeastern states and nearby regions. The city has witnessed substantial growth in healthcare facilities, including multispecialty hospitals, diagnostic centers, and specialized treatment services (Thakur & Banik, 2018). The presence of institutions such as Guwahati Medical College and Hospital (GMCH)

and Nemcare Hospital has enhanced the city's healthcare capacity. Apart from medical facilities, improved connectivity through railways, roadways, and air transportation has further increased the accessibility of Guwahati for patients seeking treatment. Despite these developments, challenges such as limited promotion, inadequate tourism integration, and infrastructure-related concerns continue to influence the city's medical tourism potential.

Understanding patients' perspectives is important for evaluating the strengths and weaknesses of medical tourism in Guwahati. Patient satisfaction, service quality, affordability, accessibility, and recovery experiences influence not only treatment decisions but also referral intentions. Referral intentions are particularly significant because recommendations from patients often influence others in selecting medical destinations (Connell, 2013; Crooks et al., 2010; Han & Hyun, 2015).

Against this backdrop, the present study seeks to examine patients' perspectives regarding medical tourism in Guwahati and evaluate the factors influencing their willingness to recommend the city to others.

Objectives of the Study

The study was conducted with the following objectives:

1. To examine patients' perspectives regarding medical tourism in Guwahati.
2. To assess patient satisfaction with healthcare services in Guwahati.
3. To analyze the relationship between patient satisfaction and referral intentions.
4. To identify the prospects of Guwahati as an emerging medical tourism destination.
5. To understand factors influencing patients' recommendations for medical treatment in Guwahati.

RESEARCH METHODOLOGY

The study follows a descriptive research design to examine patients' perceptions and referral intentions related to medical tourism in Guwahati.

Sources of Data

The study is based on primary data collected from patients receiving medical services at Guwahati Medical College and Hospital (GMCH) and Nemcare Hospital in Guwahati.

Sample Size and Technique

A total of 392 respondents participated in the study. The respondents were selected using a convenience sampling technique from patients receiving treatment at Guwahati Medical College and Hospital (GMCH) and Nemcare Hospital, Guwahati. The selection of convenience sampling was considered appropriate due to accessibility, time limitations, and practical challenges in approaching patients undergoing treatment. This method enabled the researcher to collect responses from readily available participants during the study period. However, since convenience sampling is a non-probability sampling technique, the findings may have limited generalizability beyond the selected hospitals and respondents.

Data Collection Method

Primary data were collected using a structured questionnaire based on Likert-scale statements. The questionnaire included questions relating to demographic profile, awareness, healthcare satisfaction, prospects of medical tourism, and referral intentions.

Statistical Tools and Analysis

The following statistical tools were used for data analysis:

- Percentage analysis
- Mean score analysis
- Chi-square test
- Mann–Whitney U test
- Spearman’s rho correlation analysis

Before conducting statistical analysis, a normality test was performed to assess data distribution. Since the data were found to be non-normally distributed (Shapiro–Wilk significance value < 0.05), non-parametric statistical techniques such as the Mann–Whitney U test and Spearman’s rho correlation were applied.

Theoretical Foundation of the Study

The present study is conceptually supported by healthcare service quality and tourism behaviour perspectives to understand medical tourism in Guwahati. Patient satisfaction in medical tourism is largely influenced by healthcare service quality dimensions such as treatment effectiveness, staff professionalism, hospital infrastructure, cleanliness, safety, and accessibility. These service-related aspects shape patient experiences and influence their willingness to revisit or recommend a healthcare destination.

In addition, tourism behaviour perspectives explain why patients choose a particular destination for treatment. Factors such as affordability, availability of specialized healthcare professionals, accessibility, recommendations from relatives or friends, and overall treatment outcomes influence healthcare travel decisions. Therefore, integrating healthcare service quality and tourism behaviour perspectives provides a stronger conceptual basis for understanding patient satisfaction and referral intentions in Guwahati as an emerging medical tourism destination.

Profile of Respondents

Table 1. Profile of Respondents

	Variable	Frequency	Percentage
	Gender		
Valid	Male	211	53.8
	Female	175	44.6
	Other	6	1.5
	Total	392	100.0
	Occupation/Designation		
Valid	Employed	74	18.9
	Unemployed	22	5.6
	Student	57	14.5
	Business	69	17.6
	Daily Wage Worker/Labour	53	13.5
	Farmer	38	9.7
	Unable to work	38	9.7
	House wife	41	10.5
	Total	392	100.0
	Educational Qualification		

	Variable	Frequency	Percentage
Valid	Below High School	55	14.0
	High School	179	45.7
	Graduate	104	26.5
	Postgraduate	53	13.5
	Doctorate	01	.3
	Total	392	100
	For Patients: Frequency of visiting Guwahati for treatment		
Valid	First Time	157	40.1
	Occasionally (once in a while, but not on a regular basis)	115	29.3
	Frequently (regular or repeated visits)	120	30.6
	Total	392	100.0
	Awareness: Guwahati as Medical Tourism Destination		
Valid	Yes	265	67.6
	No	127	32.4
	Total	392	100.0
	Age Group		
Valid	0-25 years	64	16.3
	26-35 years	98	25.0
	36-45 years	100	25.5
	46-55 years	100	25.5
	56-65 years	30	7.7
	Total	392	100.0
	Source of Awareness		
Valid	Social media	58	14.8
	Friends/Relatives	202	51.5
	News/Advertisements	33	8.4
	Hospital Promotion	36	9.2
	Not Aware	52	13.3
	Others	11	2.8
	Total	392	100.0

Source: Survey Data

The demographic profile provides insight into the background of respondents participating in the study.

Gender Distribution

Among the respondents, 53.8% were male, 44.6% were female, indicating that both groups are relatively well represented, but not equally so. The proportion of respondents identifying as other is only about 1.5%, which is significantly lower than the other categories. This imbalance may be reflective of the population from which the sample was drawn or could be the result of sampling limitations, response bias, or lack of inclusivity in data collection practices.

Occupational Status

The data show that the largest proportions of patients are employed, accounting for 74 individuals or 18.9% of the total sample. This is followed closely by those engaged in business activities, which represent 17.6% (69

respondents). Students constitute 14.5% (57 respondents), while daily wage workers or labourers make up 13.5% (53 respondents). Housewives account for 10.5% (41 respondents). Farmers and individuals who are unable to work each represent an equal proportion of 9.7% (38 respondents each). The smallest group is the unemployed category, which includes 22 respondents or 5.6% of the total.

Educational Qualification

Educationally, the data indicate that the largest proportion of respondents have completed high school, accounting for 179 individuals or 45.7% of the sample. This is followed by graduates, who represent 26.5% (104 respondents). Those with education below high school level constitute 14.0% (55 respondents), while postgraduate respondents make up 13.5% (53 respondents). Only one respondent, representing 0.3% of the sample, holds a doctorate degree, making it the least represented category.

Age Group-wise Description

There are five categories; 0-25 years, 26-35 years, 36- 45 years, 46-55 years, and 56-65 years and frequencies are 64, 98, 100, 100, and 30 respectively. It indicates 0-25 years group accounted for 64 respondents, and 56-65 years for 30 respondents, these groups are lowest representation. This distribution demonstrates middle age group (26-55 years), which are a concentration of respondent's majority of the sample population.

The demographic profile of respondents indicates diversity across gender, age, occupation, and educational background. Male respondents constituted a slightly higher proportion than female respondents, while middle-aged individuals formed the largest age group. Respondents represented diverse occupational categories, including employed individuals, businesspersons, students, farmers, and daily wage workers, reflecting broad socioeconomic representation. Educationally, most respondents had completed high school or higher education, suggesting a reasonably informed patient population. Overall, the demographic distribution reflects varied healthcare users seeking treatment in Guwahati, thereby enhancing the relevance of the study findings.

Frequency of Visiting Guwahati for Treatment

The data show that 157 respondents, representing 40.1% of the sample, are visiting for the first time. Meanwhile, 120 respondents, or 30.6%, reported that they visit frequently, indicating regular or repeated visits for treatment. Additionally, 115 respondents, accounting for 29.3%, visit occasionally, meaning they seek treatment in Guwahati on a non-regular basis.

This pattern highlights the role of Guwahati as an important healthcare hub, attracting both new and returning patients. It also suggests variations in healthcare needs, accessibility, and patient dependency on urban medical facilities. Patients who visit frequently may have greater familiarity with the healthcare system, whereas first-time visitors may face challenges related to navigation, cost, and accommodation.

In conclusion, the frequency distribution indicates that while a substantial proportion of patients are accessing treatment in Guwahati for the first time, a larger share consists of repeat visitors, either occasional or frequent. This demonstrates the city's significance as a center for ongoing medical care and specialized treatment. The variation in visit frequency also implies differing levels of healthcare needs and dependency, which should be considered when analyzing patient behaviour, healthcare accessibility, and the overall effectiveness of medical services in the region.

Awareness of Guwahati as a Medical Tourism Destination

Most respondents (67.6%) were aware of Guwahati as a medical tourism destination, whereas 32.4% lacked awareness. Among the sources of awareness, friends and relatives played a dominant role (51.5%), followed by social media (14.8%), hospital promotions (9.2%), and news or advertisements (8.4%). This finding highlights the significance of word-of-mouth communication in shaping medical tourism awareness.

Patient Satisfaction Analysis

Table 2. Descriptive Statistic- Mean Satisfaction

	N	Minimum	Maximum	Mean	Std. Deviation
1. Quality of medical treatment	392	1.00	5.00	3.9515	1.09180
2. Behaviour and professionalism of staff	392	1.00	5.00	3.9643	1.09580
3. Hospital facilities and cleanliness	392	1.00	5.00	3.7679	1.15751
4. Travel and accommodation convenience	392	1.00	5.00	3.9643	1.17682
5. Safety and security	392	1.00	5.00	3.9872	1.09980
6. How would you rate your recovery after undergoing medical treatment during your medical tourism experience	392	1.00	5.00	3.9490	1.20207

Source: Survey Data

Patient satisfaction is an important indicator in determining the success and sustainability of medical tourism. The mean score analysis revealed positive satisfaction levels across different service dimensions. Safety and security received the highest mean score (3.9872), indicating strong patient confidence regarding safety aspects in Guwahati. Behaviour and professionalism of staff (3.9643) and travel and accommodation convenience (3.9643) also recorded relatively high mean scores.

Similarly, quality of medical treatment received a mean score of 3.9515, reflecting favorable perceptions regarding healthcare quality. Recovery experience after treatment also received a positive score (3.9490), indicating satisfaction with treatment outcomes. However, hospital facilities and cleanliness received a comparatively lower mean score (3.7679), suggesting the need for infrastructural improvements.

Overall, respondents expressed satisfactory perceptions regarding healthcare services in Guwahati. Higher satisfaction regarding safety, staff professionalism, and treatment quality suggests that healthcare institutions are effectively meeting patient expectations in these areas. However, the comparatively lower rating for hospital facilities and cleanliness indicates a need for infrastructural improvements to further strengthen patient satisfaction and the city's competitiveness as a medical tourism destination.

Referral Intentions of Patients

Descriptive results:

Table 3. Frequency Analysis – Percentage of patients recommending

		Frequency	Percent
Valid	Yes	342	87.2
	No	50	12.8
	Total	392	100.0

Source: Survey Data

Table 4. Frequency Analysis- Reasons for Recommendation

		Frequency	Percent
Valid	Affordability	137	34.9
	Quality of care	205	52.3
	Accessibility	45	11.5
	Others	5	1.3

	Total	392	100.0
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Source: Survey Data

Referral intentions represent patients' willingness to recommend Guwahati to others for medical treatment. The study found that 87.2% of respondents expressed willingness to recommend Guwahati to others, whereas only 12.8% did not recommend it. This high recommendation rate demonstrates strong patient confidence in the city's healthcare system.

Regarding reasons for recommendation, quality of care emerged as the most important factor (52.3%), followed by affordability (34.9%). Accessibility accounted for 11.5%, while a small proportion cited other reasons.

These findings indicate that both healthcare quality and affordability play an important role in shaping referral intentions among medical tourists. Patients are more likely to recommend destinations where treatment outcomes are satisfactory and costs are comparatively manageable. This reflects the importance of maintaining quality healthcare services while ensuring affordability to strengthen Guwahati's reputation as a healthcare destination.

Relationship between Satisfaction and Referral Intentions

Table 5. Chi-square Analysis between Satisfaction Variables and Referral Intentions

Satisfaction Variable	Chi-square Value	P-Value	Result
Quality of Medical Treatment	207.451	.000	Significant
Behaviour & Professionalism of Staff	212.580	.000	Significant
Hospital Facilities & Cleanliness	119.379	.000	Significant
Travel & Accommodation Convenience	117.392	.000	Significant
Safety & Security	187.276	.000	Significant
Recovery after Medical Treatment	374.745	.000	Significant

Source: Survey Data

Chi-square analysis was conducted to examine whether patient satisfaction variables significantly influenced referral intentions.

The relationship between quality of medical treatment and recommendation intention was statistically significant ($\chi^2 = 207.451$, $p < 0.001$). Patients satisfied with treatment quality were more likely to recommend Guwahati.

Similarly, behaviour and professionalism of staff showed a significant relationship with recommendation intention ($\chi^2 = 212.580$, $p < 0.001$). Patients who experienced professional and supportive staff demonstrated stronger referral intentions.

Hospital facilities and cleanliness also showed a statistically significant relationship with recommendation intention ($\chi^2 = 119.379$, $p < 0.001$), though respondents indicated comparatively lower satisfaction in this dimension.

Travel and accommodation convenience significantly influenced referral intentions ($\chi^2 = 117.392$, $p < 0.001$), suggesting that accessibility and convenience contribute to positive patient experiences.

Safety and security exhibited a strong relationship with recommendation intention ($\chi^2 = 187.276$, $p < 0.001$). Patients perceiving higher levels of safety were more inclined to recommend Guwahati.

Similarly, treatment recovery experiences strongly influenced recommendation behaviour ($\chi^2 = 374.745$, $p < 0.001$), indicating that positive health outcomes significantly increase referral intentions.

Mann–Whitney U Test Analysis

The Mann–Whitney U test was used to examine differences in satisfaction distributions between respondents willing and unwilling to recommend Guwahati.

The results revealed statistically significant differences for all six satisfaction dimensions, including quality of medical treatment, staff professionalism, hospital facilities, travel convenience, safety and security, and recovery experience ($p = 0.000$).

Since the significance values were below 0.05, the null hypotheses were rejected in all cases. This indicates that respondents recommending Guwahati reported significantly different satisfaction levels compared to those not recommending the city.

Correlation Analysis

Satisfaction and Recommendation

Table 6. Nonparametric Correlations- Satisfaction and Recommendation

Variable	Spearman Correlation	Significance
Quality of Medical Treatment	-0.525	.000
Staff Professionalism	-0.529	.000
Hospital Facilities	-0.478	.000
Travel & Accommodation	-0.355	.000
Safety & Security	-0.501	.000
Recovery after Treatment	-0.610	.000

Source: Survey Data

Spearman’s correlation analysis demonstrated significant relationships between satisfaction variables and referral intentions. Quality of medical treatment (-0.525), behaviour and professionalism of staff (-0.529), hospital facilities (-0.478), safety and security (-0.501), and recovery experience (-0.610) showed statistically significant relationships with recommendation intention.

The negative values are likely due to coding differences in recommendation categories; however, the results clearly indicate a strong association between patient satisfaction and referral intentions.

Prospects of Medical Tourism and Recommendation

Table 7. Correlation- Prospects and Recommendation

Prospect Variable	Spearman Correlation	Significance
Guwahati has Potential as Medical Tourism Hub	-.707	.000
Affordable Treatment Cost	-.738	.000
Presence of Specialized Doctors	-.634	.000
Collaboration with travel and hospitality sectors	-.642	.000
Increased Awareness	-.724	.000
Well-Designed Hospital Website	-.099	.125

Source: Survey Data

Pearson and Spearman correlation analyses revealed strong relationships between medical tourism prospects and recommendation behaviour.

The variable “Guwahati has Potential as a Medical Tourism Hub” showed a strong and statistically significant relationship with recommendation intention ($r = -0.707$, $p = .000$). This finding suggests that patients who perceive Guwahati as having strong medical tourism potential are more likely to recommend the city for medical treatment.

Similarly, “Affordable Treatment Cost” demonstrated the strongest significant relationship with recommendation intention ($r = -0.738$, $p = .000$). This indicates that affordability is one of the most influential factors encouraging patients to recommend Guwahati as a healthcare destination.

The “Presence of Specialized Doctors” also exhibited a statistically significant relationship ($r = -0.634$, $p = .000$), implying that the availability of skilled and specialized healthcare professionals positively influences patients’ recommendation behaviour.

Likewise, “Collaboration with Travel and Hospitality Sectors” showed a significant relationship with recommendation intention ($r = -0.642$, $p = .000$). This suggests that better coordination between healthcare, accommodation, and travel-related services may strengthen the overall medical tourism experience and encourage referrals.

Further, “Increased Awareness” revealed a strong and statistically significant relationship ($r = -0.724$, $p = .000$), indicating that greater awareness regarding healthcare facilities and services in Guwahati may positively influence patients’ willingness to recommend the city.

However, “Well-Designed Hospital Website” displayed a weak and statistically non-significant relationship with recommendation intention ($r = -0.099$, $p = .125$). This suggests that website quality had comparatively little influence on patients’ referral behaviour, possibly because respondents relied more on personal experiences and recommendations from friends or relatives.

Overall, the findings demonstrate that patient perceptions regarding affordability, healthcare quality, specialized medical professionals, awareness, and healthcare-tourism coordination significantly influence recommendation behaviour. This suggests that strengthening institutional collaboration and service quality may substantially improve Guwahati’s position as an emerging medical tourism destination in Northeast India.

Major Findings of the Study

The major findings of the study are summarized below:

1. Male respondents constituted a slightly larger proportion of participants.
2. Respondents represented diverse occupational and educational backgrounds.
3. Most respondents were aware of Guwahati as a medical tourism destination.
4. Friends and relatives were the major source of awareness.
5. Respondents generally expressed satisfaction with healthcare services.
6. Safety and security received the highest satisfaction score.
7. Hospital facilities and cleanliness received comparatively lower ratings.

8. A large majority of respondents (87.2%) were willing to recommend Guwahati.
9. Quality of care and affordability emerged as major reasons for recommendation.
10. Chi-square and Mann–Whitney U tests revealed statistically significant relationships between satisfaction and recommendation.
11. Correlation analysis confirmed strong associations between medical tourism prospects and referral intentions.

Limitations of the Study

Despite providing useful insights into patient satisfaction and referral intentions in medical tourism, the study has certain limitations. The use of convenience sampling restricts the generalizability of findings beyond the selected hospitals and respondents. The study was limited to Guwahati Medical College and Hospital (GMCH) and Nemcare Hospital, which may not fully represent all healthcare institutions in Guwahati. Additionally, patient perceptions may vary over time depending on healthcare experiences and service improvements. Future studies may consider larger samples, probability sampling techniques, and inclusion of additional hospitals to improve representativeness (*Meng et al., 2023; Islam et al., 2025*).

Suggestions

Based on the findings, the following suggestions are proposed:

1. Healthcare institutions should improve hospital infrastructure and cleanliness to enhance patient satisfaction.
2. Awareness campaigns should be increased through digital media and promotional activities.
3. Collaboration between healthcare institutions, hotels, and travel agencies should be strengthened to support medical tourists.
4. Hospitals should continue focusing on quality of medical and professional staff behaviour.
5. Authorities should improve transportation, accommodation, and support facilities for patients visiting from distant areas.
6. Hospitals should strengthen their online presence and website accessibility to improve patient information systems.

CONCLUSION

Medical tourism is increasingly becoming an important contributor to regional healthcare and economic development. The present study reveals that Guwahati possesses strong potential to emerge as an important medical tourism destination in Northeast India. The city benefits from quality healthcare facilities, professional staff, affordable treatment, and accessibility.

The findings indicate that patient satisfaction strongly influences referral intentions. Since most respondents expressed willingness to recommend Guwahati, the city demonstrates positive prospects for further development in medical tourism. Nevertheless, improvements in infrastructure, promotion, and integration with tourism-related services remain necessary.

The study concludes that Guwahati has significant opportunities to strengthen its position as a healthcare destination if policymakers, hospitals, and tourism stakeholders collectively address existing challenges and promote patient-centered healthcare services.

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