

Assessing Service Quality in Ayurveda Medical Tourism: Health Care Services of Kerala, India

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Abstract: This study aims to explore the main dimensions of service quality and their impact on customer satisfaction in Ayurveda medical tourism in Kerala. The research seeks to identify the most important service quality attributes from the perspective of tourists to know various dimensions affect satisfaction and identify challenges and opportunities for improving service delivery in Ayurveda wellness centres. The approach adopted was quantitative research with an analytical and descriptive design. Data collection was through a structured questionnaire using a stratified random sampling method with a sample of 112 tourists. The data was analysed by use of SPSS software and statistical techniques, including the Friedman test, One-way ANOVA and One-sample t-test. Findings includes the service quality dimensions like Reliability, Responsiveness, Assurance, Empathy and Tangibles have significant influence on customer satisfaction. Improvement areas include infrastructure, cultural sensitivity and hygiene standards. Results of this study indicate Ayurveda service providers will need to work on reliability and responsiveness and personalization to drive customer satisfaction. It is concluded in the study that overcoming these challenges and exploiting the scope of improvement can help strengthen the competitiveness of Ayurveda wellness centres in Kerala's increasing medical tourism market.

Keywords: Service Quality, Customer Satisfaction, Ayurveda, Medical Tourism, Kerala, Reliability, Responsiveness, Tourism Research.

1. Introduction

Ayurveda is one of the most ancient systems of medicine and originates in India over 5,000 years ago. Ayurveda is often called the "Science of Life." As a holistic approach to health and well-being, it focuses on balancing the mind, body, and spirit to prevent illness and promote longevity. With a history of being the home to medicinal plants and having a good climate, Kerala has become a destination for Ayurveda in wellness tourism worldwide. During these years, the state has found its own place in Ayurveda medical tourism and attracted different clientele looking for natural and alternative healing therapies. There is exponential growth in medical tourism, which refers to travel to another location for health-related services worldwide. Among these, wellness tourism-Ayurveda-based in particular-has become a crucial component of Kerala's tourism economy. Ayurvedic treatments, from detoxification therapies like Panchakarma to stress relief programs and chronic ailment management, attract tourists of domestic and international origin to Kerala. It is what makes Ayurveda in Kerala unique-skilful practitioners, ancient traditions, and scenic environments-putting Kerala at the helm of the global medical and wellness tourism industry. The increasing intensity of competition in the international wellness tourism industry further contributes to the significance of quality of service. This study will try to understand the factors that affect reliability, responsiveness, assurance, empathy, and tangibles, in relation to customer satisfaction and loyalty. It further investigates the issues and opportunities in service quality improvement for the benefit of stakeholders in Kerala's wellness sector. The background of this study

points out the importance of service quality in establishing Kerala's position in the competitive wellness tourism market.

Statement of the Problem

The good reputation of Kerala as one of the world's best destinations for Ayurveda medical tourism there are great challenges in sustaining and improving service quality to meet the demands of a more discerning international clientele. While tourists come to Kerala for its authentic Ayurveda practices, their overall satisfaction is still determined by a larger set of service quality dimensions that include reliability, responsiveness, assurance, empathy and tangibles. The delivery of services is often inconsistent in Ayurveda wellness centres because of inadequate infrastructure and poor human resources. Expectations of domestic and international tourists have also been a problem that has been influenced by different cultural backgrounds and past exposure to wellness tourism. International tourists may expect a mix of more traditional Ayurveda therapy and modern hospitality standards in contrast to domestic tourists are cost-effective and accessible. Adding to this problem is the increasing competition in the global wellness tourism market. Places like Sri Lanka, Thailand, and Bali have begun to market their ancient healing practices, which are sometimes accompanied by better infrastructure and marketing efforts. To stay ahead of the competition, Kerala needs to fill gaps in service quality and enhance the experience of medical tourists. In this regard, this research attempts to answer these questions by analysing the key dimensions of service quality in Kerala's Ayurveda medical tourism sector.

Research Objectives

- To analyse the major dimensions of service quality such as reliability, responsiveness, assurance, empathy and tangibles in Ayurveda medical tourism in Kerala.
- To evaluate the impact of service quality on the satisfaction and loyalty of domestic and international medical tourists seeking Ayurveda treatments in Kerala.
- To identify the challenges and opportunities in enhancing service quality in Kerala's Ayurveda wellness centres and recommend strategies to improve the overall medical tourism experience.

Scope of the Study

In the framework of Kerala, a worldwide well-known location for holistic health and wellbeing this study investigates the important aspects of service quality in Ayurveda medical tourism. The study primarily aims to assess important elements that greatly affect the loyalty and happiness of domestic and foreign visitors as dependability, responsiveness, certainty, empathy, and tangibles. It looks at how these dimensions of service quality affect the holistic experience of medical tourists on Ayurveda treatments and wellness programs in Kerala. Geographically, the scope of the study is limited to Ayurveda wellness centres operating in Kerala both private and government supported. It incorporates a mix of first-time visitors and repeat tourists to give a nuanced view of their service quality experience. The study keeps in mind the post-pandemic focus on hygiene and safety which has defined the new standards for medical tourism service delivery. The outcome of the study is intended to benefit multiple stakeholders in Ayurveda wellness centres, policymakers, and the overall tourism sector in Kerala.

Significance of the Study

This study holds significance in both the academic and practical contributions to the area of medical tourism and service quality management. In terms of academic contribution, it addresses a critical gap in research, focusing on the specific context of Ayurveda medical tourism in Kerala where traditional healing practices converge with modern service expectations. The study is significant for Kerala's tourism industry heavily relies on Ayurveda to attract global and domestic visitors. The findings can guide wellness centres in enhancing their service quality to meet the expectations of diverse tourists. Knowing the value of empathetic and reassuring care means that centres can work toward better customer relationships. This focus on customer satisfaction and loyalty resonates with the state's efforts to enhance its tourism appeal in a competitive global marketplace.

2. Review of literature

Sharma (2025) Today tourists are looking for not only effective treatments but also holistic wellness experiences that align with their physical, mental and emotional well-being. Integration of traditional Ayurvedic practices with modern hospitality standards is one of the key areas of focus for wellness centres in Kerala. This balance will have to be achieved after the full understanding of the customers' expectations, service provider challenges, and opportunities in terms of improving service delivery.

Anju and Bindu, 2024; Hariharan et al., 2024; Deopujari et al., (2024). The state has become the hot destination for Ayurveda medical tourism over the last two decades with a broad array of clients from those seeking wellness to chronic health problems sufferers. The scenario changes with increased competition in medical tourism along with the rise in customer expectation to get it competed where the quality of services will be the critical determinant to compete with Kerala in a niche market

Rajapakshe et al., 2024; Gurunathan and Lakshmi, (2024) The state is feted for its authentic Ayurveda treatments, concerns are arising regarding maintaining service quality at a consistent level, addressing infrastructural challenges and meeting diverse expectations of medical tourists from varied cultural and demographic backgrounds. The post-pandemic era has emphasized the necessity of providing quality services in Ayurveda medical tourism with a heightened demand in wellness tourism worldwide

Suhail and Srinivasulu, (2021) Service quality encompasses several dimensions that influence satisfaction, loyalty and other facts of experience in Ayurveda medical tourism. Factors like the reliability of the treatment, responsiveness of the staff, assurance of expertise, empathetic care and tangible facilities are crucial in influencing the customer perception. To sustain the long-run existence of Kerala's Ayurveda wellness sector one must know how these factors would affect the satisfaction and loyalty of domestic and international tourists.

Arachchi and Kaluarachchi, (2019) Ayurveda is one of the world's oldest holistic healing systems very popular around the world because it approaches health and wellness with a natural and individualistic perspective. Originating in the rich traditions and culture of India, Ayurveda has evolved into an important component of medical tourism in Kerala. Often termed as "God's Own Country," Kerala is one of the most sought-after destinations in India for domestic as well as international tourists given its scintillating landscapes, tropical climate, and rich heritage traditions.

The purpose of this research is to identify the obstacles and possibilities for enhancing the whole wellness experience in Ayurveda medical tourism in Kerala, as well as to analyse the important aspects of service quality in this sector and how they affect consumer happiness and loyalty. To help Ayurveda centres compete on a worldwide scale, this research aims to shed light on how they might improve their services along the important aspects of service quality, including responsiveness, dependability, assurance, empathy, and tangibles. The study's results will be useful for those involved in the Ayurveda wellness business in Kerala and will add to the scholarly literature on medical tourism.

3. Research Methodology

This study uses a quantitative method of research to enable an analysis of numerical data generated to establish patterns, relationship and differences between Ayurveda treatment, perceptions of service quality and satisfaction. The nature of the research design is analytical descriptive type enables the investigation of a main variable concerning the theme of service quality and satisfaction of customers as well as describing the experiences and the perceptions of tourists on visits to Ayurveda wellness centres in Kerala.

Sampling Method

The applied sampling technique in this study is that of stratified random sampling, in which the sample of people is divided into smaller strata according to characteristics before sampling includes both male and female. A proper choice of sampling method here allows sampling from each group that precisely represents the strata of the population of interest for a more general view of the perceptions tourists may hold about the place considering diverse features and characteristics within their diversity.

Population and Sample Size

The population for this study consisted of tourists who had availed medical or treatment at Ayurveda centres in selected districts (Trivandrum, Alappuzha, Palakkad, Calicut and Malappuram) in Kerala State. For this study, the tourist population that was specifically interested in Ayurveda medical tourism was considered. The total sample size of the tourist population was 112, large enough to generate the required statistics and provide results of sound judgment.

Data Collection Tool

The structured questionnaire will be the primary tool of data collection for this study. It is designed to capture the perceptions of service quality dimensions, satisfaction levels and other relevant factors influencing their experience at Ayurveda treatment centres. The questionnaire contains both closed-ended and Likert-scale questions to help quantify the responses and enable statistical analysis.

Data Analysis

The data collected is analysed using SPSS software for the Social Sciences. The process of analysis includes the use of various statistical techniques for the examination of relationships and differences in the data. The following are the tests used:

Friedman Test: The rankings of many service quality parameters depending on their perceived relevance by visitors are investigated using a non-parametric test. It clarifies if the elements of service quality reliability, responsiveness, assurance, empathy, and tangibles have appreciable variations in importance.

One-way ANOVA: This statistical test is utilized to analyse various factors affecting service quality perceptions and customers satisfaction along the specific dimensions. ANOVA enables the results to be identified if there is a significant variation of mean score for customer satisfaction among all the groups according to the kind of tourist's visit like wellness, medical treatment or even a combined purpose.

One-Sample t-Test: This is one of the tests that has been used to compare a sample mean with a known value or hypothesized population mean. In this case, it has been applied in testing the significance of the challenges and opportunities to the respondents in enhancing service quality.

4. Data Analysis and Interpretation

Table 1 (a): Ranks on dimensions of service quality based on importance in experience with Ayurveda medical tourism in Kerala

H0: There is no statistically significant difference in the median response on factors influencing the key dimensions of service quality based on importance in experience with Ayurveda medical tourism in Kerala.

Parameters	Mean Rank
Reliability	2.93
Responsiveness	3.02
Assurance	3.02
Empathy	3.02
Tangibles	3.02

Table 1 shows mean ranks of five main dimensions of service quality that have been determined based on the importance levels in the Ayurveda medical tourism experience in Kerala. The five dimensions discussed are Reliability, Responsiveness, Assurance, Empathy and Tangibles. The mean rank for every dimension is shown as under Reliability (2.93), Responsiveness (3.02), Assurance (3.02), Empathy (3.02) and Tangibles (3.02). From the data, it is noted that Reliability has the lowest mean rank of 2.93, indicating that respondents view reliability, in the sense used here as the consistency of service delivery as somewhat less important than the other dimensions. This may indicate that though reliability is significant, the experience of Ayurveda medical tourism depends more on variables such as how responsive staff is, level of assurance given by the staff, empathy and tangibility of the physical ambience.

Table 1(b): Test Statistics on Key dimensions of service quality based on importance in experience with Ayurveda medical tourism in Kerala

N	112
Chi-Square	16.000
df	4
Asymp. Sig.	.003
a. Friedman Test	

Table 1 (b) shows the results of the Friedman Test, a non-parametric statistical test designed to find if the median rankings of five main aspects of service quality vary significantly. Reliability, responsiveness, assurance, empathy, and tangibles define the aspects. These are the test statistics: Chi-Square = 16.000; Degree of Freedom (df) = 4; Asymp. Sig. (p-value) = 0.003. The p-value of 0.003 indicates that variations in perceived value of important characteristics of service quality are statistically significant because it is less than the 0.05 significance threshold. Stated differently, responders see these aspects differently and there is a meaningful distinction in how they prioritize these factors in their

experience with Ayurveda medical tourism in Kerala. Therefore, we reject H_0 , stating that no significant difference in the medians of these dimensions exist.

The rejection of the null hypothesis means that the service provider should not consider these as dimensions of equal importance but direct its attention to enhancing those deemed to be most important by the service consumer. The fact that Responsiveness, Assurance, Empathy, and Tangibles stood above Reliability supports such a conclusion these factors including prompt service, staff professionalism, understanding customer needs, and the quality of the physical environment are key to enhancement of the overall experience in Ayurveda tourism. Providers should focus on employee training for better responsiveness and empathy. This will enable them to provide quality maintenance of the facilities, along with reiterating that the service is of top quality. This can potentially help improve customer satisfaction and thereby be a significant factor in a competitive Ayurveda tourism industry for Kerala.

Table 2: ANOVA on customer awareness and knowledge about millet production and its nutritional and environmental benefits

H_0 : There is no significance difference in the mean score on impact of service quality on your satisfaction with Ayurveda medical tourism in Kerala based on the purpose of visit.

		Sum of Squares	df	Mean Square	F	Sig.
Reliability of Ayurveda services	Between Groups	80.868	4	20.217	67.100	.000
	Within Groups	32.239	107	.301		
	Total	113.107	111			
Responsiveness of staff	Between Groups	80.868	4	20.217	67.100	.000
	Within Groups	32.239	107	.301		
	Total	113.107	111			
Assurance provided by the staff feel secure.	Between Groups	72.730	4	18.182	45.299	.000
	Within Groups	42.949	107	.401		
	Total	115.679	111			
The empathy shown by the staff contributes to my satisfaction.	Between Groups	72.730	4	18.182	45.299	.000
	Within Groups	42.949	107	.401		
	Total	115.679	111			
The physical tangibles of the wellness centres meet my expectations.	Between Groups	69.781	4	17.445	20.633	.000
	Within Groups	90.469	107	.846		
	Total	160.250	111			

Table 2 displays the outcome of an ANOVA test to determine if there is a significant difference in the mean scores on the impact of service quality on the satisfaction of Ayurveda medical tourists based on the purpose of visit. The test was applied to five dimensions of service quality as Reliability, Responsiveness, Assurance, Empathy, and Tangibles. The statistical results for each dimension are as follows:

- Reliability: $F = 67.100$, $p\text{-value} = 0.000$
- Responsiveness: $F = 67.100$, $p\text{-value} = 0.000$
- Assurance: $F = 45.299$, $p\text{-value} = 0.000$
- Empathy: $F = 45.299$, $p\text{-value} = 0.000$
- Tangibles: $F = 20.633$, $p\text{-value} = 0.000$

The p -values for all the five dimensions are 0.000, which is lower than the threshold of 0.05. This, therefore, means that for all the dimensions the null hypothesis (H_0), which stated that there was no significant difference in mean scores for the impact of service quality on satisfaction as a function of purpose of visit, is rejected. In other words, the purpose of visit significantly influences how each of these service quality dimensions affects the satisfaction of Ayurveda medical tourists. The F -values are higher for Reliability and Responsiveness (67.100), indicating that these dimensions have a stronger effect on satisfaction compared to other factors such as Assurance, Empathy, and Tangibles. This indicates that tourists' expectations relating to the consistency and promptness of delivering services are key in affecting their satisfaction with Ayurveda medical tourism. The high F -values for Reliability and Responsiveness emphasize the need for ensuring that Ayurveda service providers ensure reliability and responsiveness in service delivery to meet clients' expectations. Assurance, Empathy, and Tangibles are more moderate in influencing the degree of satisfaction, meaning that the professionalism, understanding, and the ambiance of the wellness centers must be a matter of interest to the tourists as

well. Hence, the Ayurveda medical tourism vendors should provide services that are always available in time and in good consistency while presenting an individualistic professional approach along with a hygienic clean ambiance to raise customer satisfaction levels.

Table 3: One-Sample t Test on challenges and opportunities in enhancing service quality in Ayurveda wellness centers in Kerala

H0: The mean score on challenges and opportunities in enhancing service quality in Ayurveda wellness centres in Kerala has no significant difference.

	Test Value = 0.6					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Inconsistent service delivery across	15.457	111	.000	1.80179	1.5708	2.0328
Lack of skilled personnel	16.323	111	.000	1.78393	1.5674	2.0005
Improved infrastructure	16.937	111	.000	1.73929	1.5358	1.9428
Cultural sensitivity is critical	17.599	111	.000	1.69464	1.5038	1.8855
Increased hygiene and safety standards are essential to improving service quality post-COVID-19.	10.609	43	.000	1.99091	1.6124	2.3694

Table 3: Outcome of the test of One-Sample t test to examine different issues for improving service quality in Ayurveda wellness centres of Kerala. It tests five statement-level issues regarding challenges and opportunities against a test value of 0.6. In the table below, test results are reported for the five statements.

- Inconsistent service delivery across Ayurveda centers is a major challenge.
- $t = 15.457$, $p\text{-value} = 0.000$
- Mean Difference = 1.80179
- Lack of skilled personnel impacts the quality of Ayurveda services.
- 1.78393
- Improved infrastructure and facilities present an opportunity to enhance the tourist experience.
- $t = 16.937$, $p\text{-value} = 0.000$
- Mean Difference = 1.73929
- Cultural sensitivity is critical to meeting the expectations of international tourists.
- $t = 17.599$, $p\text{-value} = 0.000$
- Mean Difference = 1.69464
- Increased hygiene and safety standards are essential to improving service quality post-COVID-19.
- $t = 10.609$, $p\text{-value} = 0.000$
- Mean Difference = 1.99091

For all the statements, the p-values have been found to be 0.000, which is lesser than the threshold of 0.05. Hence, in all the challenges and opportunities, the null hypothesis that there is no significant variation in the mean scores on the challenges and opportunities aspects is rejected. This could indicate that these factors, as perceived by the people, are highly significant, so improvement in them would greatly bring about a quality of the service offered in Ayurveda wellness centers in Kerala. The most significant challenges the respondents mentioned include inconsistent delivery and a lack of competent professionals. Cultural sensitivity has become very important because of the rising demand from international tourists who want a more personalized experience that respects their cultural norms. High hygiene and safety standards, especially in the post-COVID-19 era, will help restore tourist confidence and improve the overall experience. Thus, Ayurveda wellness centres must engage these challenges and opportunities in earnest to enhance competitiveness and eye-appeal of the Kerala Ayurveda medical tourism sector.

5. Findings

- The research on the dimensions of service quality in Ayurveda medical tourism in Kerala reveals important insights into how tourists perceive various service attributes. The study identified five key dimensions: Reliability, Responsiveness, Assurance, Empathy, and Tangibles and ranked them based on their importance in shaping the experience. The least ranked was Reliability at 2.93 that indicated consistency in service delivery. This suggests that though reliability is of great importance, it is not overshadowed by the importance of other dimensions, such as Responsiveness, Assurance, Empathy, and Tangibles, all of which were given the same rank, at 3.02.
- The findings reveal that Ayurveda service providers must maintain high standards of reliability and responsiveness, coupled with professionalism, empathy, and a high-quality physical environment. While tourists expect reliable and timely service, they also demand personalized, safe, and comfortable experience, especially when the visit is for wellness and medical tourism.
- The study has identified that the Ayurveda wellness centers in Kerala are facing tremendous challenges in terms of consistency of services and competence of employees. But if the opportunity is well exploited in infrastructure improvement, cultural sensitivity, and enhanced hygiene standards, then service providers can work significantly to improve the experience and satisfaction of the tourists.

6. Suggestions

- The focus should be on improving the responsiveness of staff to the needs of customers and ensuring that they can provide personalized, professional care. This would make the experience of visiting and staying in Kerala more comfortable, pleasant, and welcoming for the tourists. The staff needs to be trained in empathy and effective communication because, in medical tourism, the above factors play a significant role in customer satisfaction.
- Ayurveda service providers must focus on delivering reliability and responsiveness, as these were found to have the strongest effect on customer satisfaction. Service providers should implement consistent service delivery systems and ensure that staff is trained to respond promptly and effectively to customer inquiries and concerns.
- Five dimensions (reliability, responsiveness, assurance, empathy, and tangibles) of quality interact differently according to the purpose of visit, it calls for customized service according to the demands of wellness and medical tourism in order to provide an experience safe, comfortable, and trustworthy. Holistic improvements towards overall satisfaction through addressing all dimensions.
- Ayurveda wellness centers should establish and standardize service protocols in every place in overcoming the barriers of the irregular service delivery and a lack of well-equipped human resources, therefore making the provision of well-qualified staff and quality services result from constant training programmes to the staff. Upgrade to international standards on the available infrastructure and facilities mainly regarding hygiene, safety, and cultural sensitivity.
- Providers must also improve staff sensitization towards cultural preferences and sensitivities, especially toward international visitors. With an emphasis on hygiene post the pandemic, centers must do better to ensure cleanliness and safety standards for all the guests they entertain.

7. Conclusion

The main aspects of service quality in Ayurveda medical tourism in Kerala, their influence on visitor satisfaction, and prospects and difficulties for raising Ayurvedic wellness centre service quality are the main topics of this work. By means of a thorough analysis of the five main service quality dimensions Reliability, Responsiveness, Assurance, Empathy, and Tangibles the research offers important new perspectives on how these elements affect consumer impressions and experiences in the framework of Ayurveda tourism. The results of this study underline the need of service quality in forming the whole experience of visitors and have important consequences for both academic theory and pragmatic uses in the wellness tourism sector. The suggestions offered by applying the SERVQUAL model in the context of Ayurveda medical tourism will help develop more specific frameworks for the evaluation of service quality in the wellness and medical tourism sectors. Addressing the challenges and capitalizing on the identified opportunities will help Ayurveda wellness centres improve their competitiveness and ensure long-term success in the rapidly growing medical and wellness tourism industry. The affordable price

and better service lead Kerala have scope for improving service in medical tourism, thus will increase the employment opportunity as well, so the Government also can made them a better support to this industry will make the State Ayurveda medical centres as well in better.

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