

## Assessing Hospital Managers knowledge on Green Healthcare Practices: A Survey-based Exploration

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**Abstract:** In recent years, Hospitals have increasingly turned to environmental Sustainability initiatives not only to reduce their ecological footprint but also to enhance their brand image. The study aims to evaluate the knowledge levels of Hospital managers regarding Green healthcare practices, including Green hospital branding, Sustainability, Infrastructure development, Energy efficiency, and Waste management. A structured questionnaire was developed utilizing Likert scale responses for Knowledge assessment of managers familiarity and understanding of these critical areas. The survey was administered to hospital managers across various healthcare facilities. The findings shed light on the current state of knowledge among hospital managers and highlight areas for improvement in environmental Sustainability practices within Healthcare management. Understanding the knowledge gaps in this domain is crucial for implementing effective strategies to enhance sustainability initiatives in healthcare facilities.

**Keyword:** Hospital managers, Green healthcare practices, Sustainability, Infrastructure development, Energy efficiency, Waste management, Knowledge assessment, Green Hospital Branding

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## **Introduction-**

The healthcare industry faces mounting pressure to adopt sustainable practices due to the environmental impact of its operations and the growing awareness of ecological issues among stakeholders <sup>1</sup>. Hospitals, as significant contributors to pollution and waste generation, have begun to recognize the importance of environmental responsibility not only as a moral imperative but also as a strategic business decision <sup>2</sup>. Consequently, many healthcare organizations are incorporating sustainability principles into their branding strategies to distinguish themselves in an increasingly competitive market and to appeal to environmentally conscious consumers <sup>3</sup>. To realize the objectives of environmentally sustainable healthcare, hospitals must integrate practices aligned with green hospital principles<sup>4</sup>. Understanding the extent of awareness among private hospital managers regarding these initiatives is crucial. This study aims to evaluate the knowledge levels of hospital managers at various hierarchical levels within private healthcare institutions. Employing the Delphi method, a comprehensive questionnaire was devised to ascertain their understanding of green hospital concepts.

## **Review of Literature-**

Hospital green branding refers to the deliberate efforts by healthcare institutions to establish and promote an environmentally responsible image <sup>5</sup>. This branding strategy involves integrating sustainable practices into various aspects of hospital operations, including energy conservation, waste management, procurement, and community engagement <sup>6</sup>. By aligning their branding with environmental stewardship, hospitals seek to convey a commitment to social responsibility and to differentiate themselves from competitors.

Strategies for Hospital Green Branding <sup>7</sup>

Several strategies can be employed by hospitals to enhance their green branding:

- **Energy Efficiency Initiatives-** Implementing energy-saving technologies, such as LED lighting and smart HVAC systems, to reduce carbon emissions and operational costs.
- **Waste Reduction and Recycling Programs:** Establishing protocols for waste segregation, recycling, and composting to minimize landfill waste and promote resource conservation.
- **Sustainable Procurement Practices-** Prioritizing the purchase of environmentally friendly products and materials, such as recycled or biodegradable supplies, to support sustainable supply chains.
- **Green Building Design-** Constructing or retrofitting healthcare facilities to meet green building standards, to optimize energy and water usage while enhancing indoor air quality.
- **Community Engagement and Education-** Engaging with patients, staff, and the broader community through outreach programs, educational workshops, and public events to raise awareness about environmental issues and promote sustainable behaviors.

### Outcomes of Hospital Green Branding <sup>8</sup>

The adoption of green branding by hospitals has been associated with several positive outcomes

- **Enhanced Reputation-** Hospitals that prioritize sustainability and environmental stewardship are perceived more favourably by patients, employees, and other stakeholders, leading to enhanced brand reputation and credibility.
- **Improved Patient Satisfaction-** Patients increasingly value environmental responsibility in healthcare settings and are more likely to choose hospitals that demonstrate a commitment to

sustainability, thus contributing to higher levels of patient satisfaction and loyalty.

- **Cost Savings-** Investments in energy efficiency and waste reduction often result in long-term cost savings for hospitals through reduced utility bills, lower operational expenses, and improved resource utilization.
- **Staff Engagement-** Green branding initiatives can foster a sense of pride and engagement among hospital staff, who appreciate working for an organization that prioritizes ethical and environmentally conscious practices.

Despite the potential benefits, hospitals may encounter challenges in implementing green branding strategies, including financial constraints, regulatory barriers, and resistance to change from internal stakeholders. Moreover, the complexity of healthcare operations and the unique requirements of medical facilities present additional hurdles for achieving sustainability goals.

### **Methodology-**

For development of a questionnaire, Delphi method was used, which follows-

**Selection of Expert Panel-** A diverse panel of experts was assembled, comprising individuals with expertise in sustainability, healthcare management, environmental science, and related fields. Experts were chosen based on their academic credentials, professional experience, and contributions to the field. Included experts from hospital and management professors with knowledge on topic.

**Round 1 -** In the first round, experts were asked to identify key domains and topics relevant to green healthcare practices. Each expert independently

provided suggestions and rationale for inclusion, which were collated and synthesized by the research team.

Round 2 - Based on the domains identified in Round 1, experts were then tasked with generating specific items or questions that could assess hospital managers knowledge within each domain. These items were designed to be clear, concise, and measurable. Experts were encouraged to provide feedback on the clarity and relevance of proposed items.

Round 3 - In this round, experts were presented with the compiled list of items generated from Round 2. They were asked to review each item and provide feedback regarding its clarity, relevance, and appropriateness for assessing hospital managers knowledge. Experts were also invited to suggest modifications or additional items as needed.

Consensus Building is done next. Throughout the Delphi process, efforts were made to achieve consensus among the expert panel regarding the final set of items included in the questionnaire. Consensus was reached through iterative rounds of feedback and revision, with the research team facilitating discussions and synthesizing expert opinions.

Validation and Pilot Testing- Once consensus was reached on the questionnaire items, the questionnaire underwent validation and pilot testing. This involved assessing the questionnaire's reliability, validity, and appropriateness for the target population of hospital managers. Feedback from pilot testing was used to further refine the questionnaire as necessary.

Following validation and pilot testing, the questionnaire was finalized for use in the survey of hospital managers. The finalized questionnaire consisted of a series of Likert scale questions designed to assess managers knowledge of green healthcare practices across various domains, including green hospital branding, sustainability, infrastructure development, energy efficiency, and waste management.

The questionnaire was then administered to a sample of hospital managers, and responses were collected and analyzed to evaluate managers knowledge

levels in relation to the identified domains. Statistics, were calculated to summarize the data, providing insights into areas of strength and areas for improvement in hospital managers knowledge of green healthcare practices.

Hospital managers from corporate healthcare institutions in a Tier 1 city were invited to participate in the study by completing the questionnaires. A random selection of ten corporate hospitals was made, and their managers were contacted to fill out the questionnaires. Of the 480 distributed questionnaires, 418 were returned fully completed and included in the final analysis.

### **Results and Discussion –**

The increasing focus on environmental sustainability in healthcare settings reflects a growing global awareness of the critical need to reduce environmental impacts while maintaining high standards of care. This study assessed hospital managers knowledge of green healthcare practices, identifying significant gaps and opportunities for improvement.

The Questionnaire given is-

Q 1. How aware are you of the concept of 'green hospital branding'?

1. Very Unaware
2. Unaware
3. Neither Aware nor Unaware
4. Aware
5. Strongly Aware

Q 2. How aware are you of the importance of sustainability in healthcare facilities?

1. Very Unaware
2. Unaware
3. Neither Aware nor Unaware
4. Aware
5. Strongly Aware

Q 3 How aware are you of sustainable infrastructure development within hospitals?

1. Very Unaware
2. Unaware
3. Neither Aware nor Unaware
4. Aware
5. Strongly Aware

Q 4. How aware are you of initiatives aimed at improving energy efficiency in hospitals?

1. Very Unaware
2. Unaware
3. Neither Aware nor Unaware
4. Aware
5. Strongly Aware

Q 5. How aware are you of hospitals managing waste and promoting recycling effectively?

1. Very Unaware
2. Unaware
3. Neither Aware nor Unaware
4. Aware
5. Strongly Aware

Q 6. How aware are you of the latest trends and best practices in green hospital branding, sustainability, infrastructure development, energy efficiency, and waste management?

1. Very Unaware
2. Unaware
3. Neither Aware nor Unaware
4. Aware
5. Strongly Aware

Q 7. How aware are you that the hospital is committed to environmental sustainability?

1. Very Unaware
2. Unaware
3. Neither Aware nor Unaware
4. Aware
5. Strongly Aware

Q 8. How aware are you that a hospital's commitment to environmental sustainability has an impact on its reputation and patient satisfaction?

1. Very Unaware
2. Unaware
3. Neither Aware nor Unaware
4. Aware
5. Strongly Aware

Q 9. In your opinion, what are the main challenges hospitals face in becoming more environmentally sustainable?

- 1: Lack of awareness
- 2: Budget constraints
- 3: Resistance to change
- 4: Regulatory hurdles
- 5: Other (please specify):

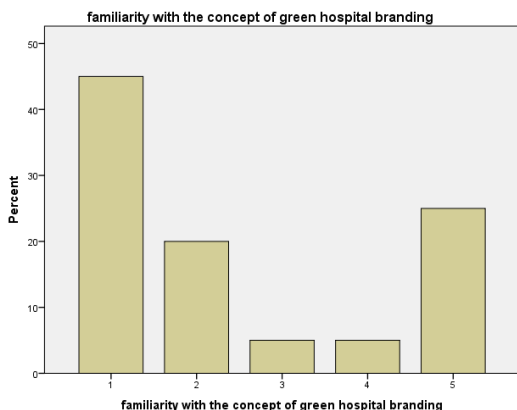
Thank you for your participation.

The results received are-

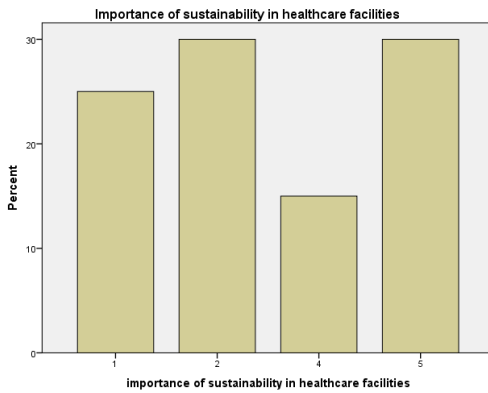
1. Analysis for Question 1, Nearly half of the respondents are very unaware of the concept of green hospital branding, highlighting a knowledge gap. A significant proportion of respondents are either strongly aware or completely unaware, suggesting polarization in awareness levels.



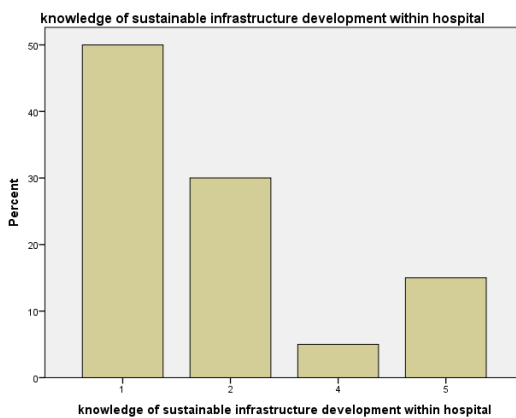
The small percentages in the middle categories (3 and 4) suggest that there aren't many people with partial awareness; most either know a lot or very little about the topic. The majority of valid respondents (45.0%) are strongly aware with the concept of green hospital branding



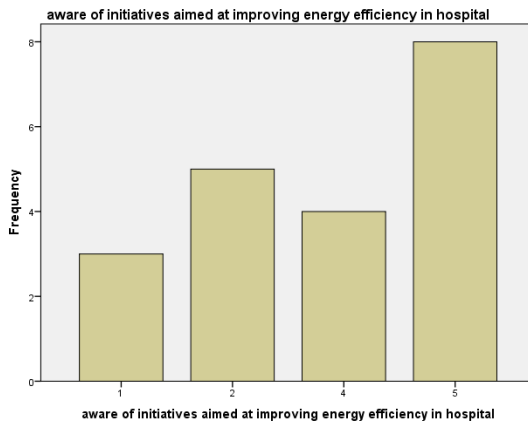
2. Analysis for Question 2- The largest group of respondents (approximately 60% combined) are either unaware or very unaware, which indicates that efforts may be needed to increase education and communication about sustainability in healthcare. At the same time, about 30% of people are strongly aware, which demonstrates a growing recognition of sustainability's importance in healthcare. The neutral responses are comparatively low, suggesting that most respondents either have a strong opinion about their level of awareness or none at all.



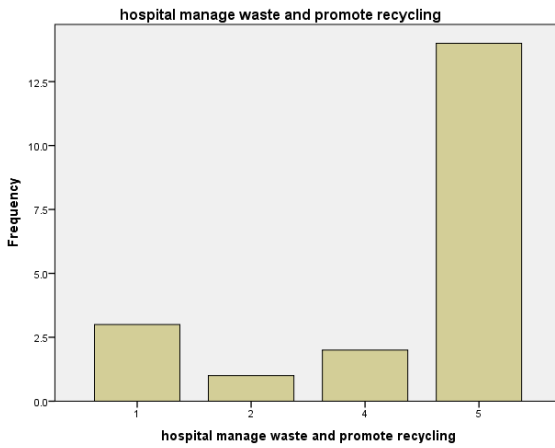
3. Analysis for Question 3- The majority of respondents (around 80%) are either very unaware or unaware, pointing to a substantial knowledge gap regarding sustainable infrastructure in hospitals. There is little neutrality, as most people either feel uninformed or informed, with only a small percentage reporting that they are neither aware nor unaware. A small but significant group (approximately 10% for both “aware” and “strongly aware”) shows a higher level of knowledge, which could be targeted for leadership or advocacy roles in promoting sustainable infrastructure in healthcare settings.



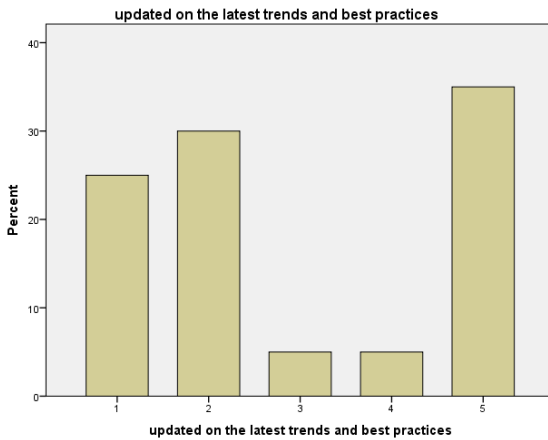
- 4. Analysis for Question 4- The data highlights a polarization between those who are strongly aware and those who are unaware of energy efficiency initiatives. Nearly half of the respondents are either unaware or very unaware, which suggests room for improving communication and outreach. On the other hand, 35% being strongly aware indicates that existing awareness programs or initiatives are having a strong impact on a portion of the population.



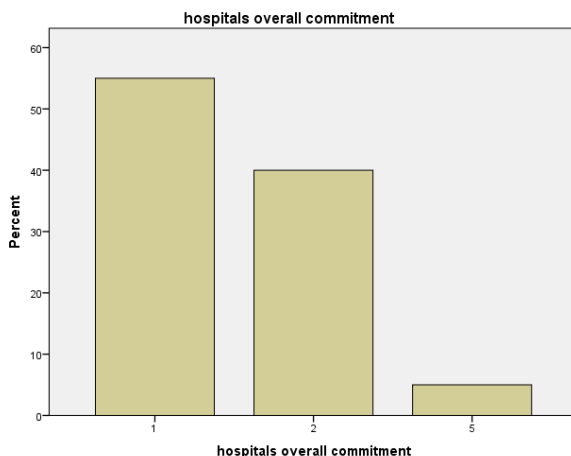
- 5. Analysis for Question 5- The data reflects an overwhelmingly positive awareness of hospitals waste management and recycling efforts, with 80% of respondents indicating either strong awareness or awareness (categories 4 and 5 combined). The small percentage of people who are unaware or very unaware (20% combined) points to a relatively minor knowledge gap. Hospitals could target this group to ensure broader understanding and engagement. The lack of responses in the neutral category suggests that people tend to either know about these practices or don't, indicating a binary perception of the issue.



6. Analysis for Question 6- A significant portion (30%) of respondents are Very Unaware and another 30% are Unaware of the latest trends in green hospital branding, sustainability, infrastructure development, energy efficiency, and waste management. Around 25% of respondents are Strongly Aware and 10% are Aware, indicating a smaller group with strong knowledge of the topic. Only 5% are neutral, neither aware nor unaware.

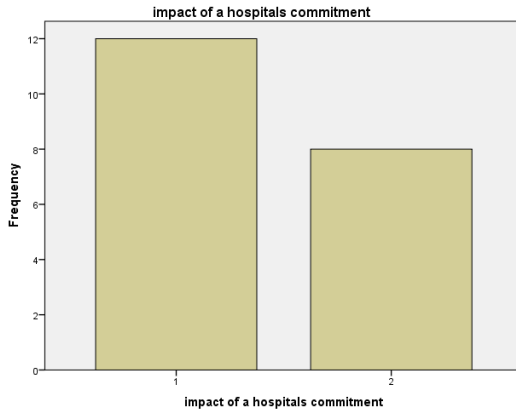


7. Analysis for Question 7- The majority of respondents (approximately 52.63%) are Very Unaware of the hospital's commitment to environmental sustainability, while an additional 42.11% are Unaware. There is no one in the Aware or Neither Aware nor Unaware categories, indicating a complete lack of awareness in the middle ground. Only 5.26% of respondents are Strongly Aware, reflecting a very small group who recognizes the hospital's commitment.



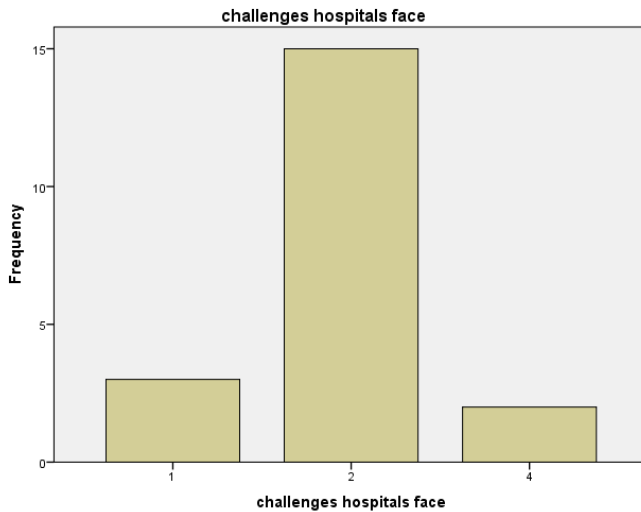
8. Analysis for Question 8- A total of approximately 52.63% of respondents are Unaware of the impact of a hospital's commitment to environmental sustainability, while 47.37% are Very Unaware. This indicates that nearly the entire respondent group lacks awareness regarding the link between sustainability efforts and hospital reputation and patient satisfaction. There are no respondents in the Neither Aware nor Unaware, Aware, or Strongly Aware categories, highlighting a complete absence of acknowledgment of the issue. With over 100% of respondents categorized as Unaware or Very Unaware, there is a clear need for educational initiatives or communications from the hospital to

inform patients and stakeholders about the positive implications of sustainability efforts.



9. Analysis for Question 9- The most significant challenge identified by respondents is Budget Constraints, with 70% selecting this option. This indicates that financial limitations are seen as the primary barrier to achieving environmental sustainability in hospitals. Both Lack of Awareness and Regulatory Hurdles were identified by 15% of respondents, suggesting these are also recognized as challenges, though to a lesser extent. There were no responses indicating Resistance to Change, suggesting that this may not be viewed as a major obstacle compared to financial and awareness-related issues.

The results indicate that hospitals primarily face budget constraints in their efforts to become more environmentally sustainable. There is also a recognition of the importance of awareness and regulatory challenges, but these are not viewed as pressing as financial limitations. This insight could guide hospitals in focusing their strategies on securing funding and financial support to facilitate their sustainability initiatives.



**Conclusion:**

Hospital green branding represents a strategic approach for healthcare organizations to demonstrate their commitment to environmental responsibility while enhancing their brand image and competitive advantage. By implementing sustainable practices and engaging with stakeholders, hospitals can achieve positive outcomes in terms of reputation, patient satisfaction, and operational efficiency. However, realizing the full potential of green branding requires overcoming challenges and integrating sustainability into the core values and practices of healthcare institutions.

Limitations of the Study: The participants in this study came from various managerial levels, which may have contributed to variations in the results. These differences could be attributed to varying degrees of knowledge and access to information across the managerial hierarchy.

**References-**

1. Dhillon, V. S., & Kaur, D. (2015). Green hospital and climate change: Their interrelationship and the way forward. *Journal of clinical and diagnostic research: JCDR*, 9(12), LE01.
2. Kumari, S., & Kumar, R. (2020). Green hospital-A necessity and not option. *Journal of Management Research and Analysis*, 7(2), 46-51.
3. Kumar, V., & Christodouloupoulou, A. (2013). Sustainability and branding: An integrated perspective. *Industrial Marketing Management*, 43(1), 6–15.  
<https://doi.org/10.1016/j.indmarman.2013.06.008>
4. Salehi, F., & Eslami, S. V. (n.d.). Green strategies of healthcare design: Case studies of medical centers. In *Sustainable Architecture and Urban Development* (pp. 431-446).
5. Jannah, N., Bahri, M. I., Kismawadi, E. R., & Handriana, T. (2024). The effect of green brand image and green satisfaction on green brand equity mediated by green trust: Outpatients' perspective. *Quality - Access to Success*, 25(198).
6. Sagha Zadeh, R., Xuan, X., & Shepley, M. M. (2016). Sustainable healthcare design: Existing challenges and future directions for an environmental, economic, and social approach to sustainability. *Facilities*, 34(5/6), 264-288.
7. Safrit, F. W. (2019). *Healthcare green initiatives and consumers' hospital loyalty: A quantitative study of the role of green consciousness*. Northcentral University.



8. Lattanzio, S., Stefanizzi, P., D'Ambrosio, M., Cuscianna, E., Riformato, G., Migliore, G., Tafuri, S., & Bianchi, F. P. (2022). Waste management and the perspective of a green hospital—a systematic narrative review. *International Journal of Environmental Research and Public Health*, *19*(23), 15812. <https://doi.org/10.3390/ijerph192315812>

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**Conflicts of interest**

There are no conflicts of interest.