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Assessment of Environmental Sustainability in Healthcare Organizations with Special Reference to Coimbatore District

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Abstract

The health care Industry is the world's largest Industry and is undergoing a rapid transformation to meet the ever increasing needs and demands of the patient population. Hospitals that are dynamic, growth oriented and which survive are the ones that give priority to the quality of environmental sustainable services provided. Corporate hospitals are trying to attract patients by providing various environmental sustainable treatments. The present study is attempted to know the different Environmental sustainable strategies adopted by Health Care Organization and problems faced by the patients in availing environmental sustainable treatment. The study chosen is descriptive in nature. The sample size is determined as 250 patients through judgmental sampling technique.

Keywords: **Environmental sustainability, Patient satisfaction, Sustainable treatment.**

INTRODUCTION

Environmental footprint of hospitals mostly relates to their clinical practice, e.g. decisions regarding the use of pharmaceuticals and medical devices. Environmental sustainability in the hospitals helps to provide high quality environmental sustainable treatment to the patients, which helps the patients for quick recovery from illness. Quality patient care results in patient satisfaction. It provides a good base for repeated visits and sets the stage for favorable word-of-mouth communication to potential patients. Worldwide studies have shown that patient satisfaction is a required outcome in a hospital. India is emerging as a major player in this industry because of its high population and is currently has a $65 billion industry, which is growing at a rate of 15% and is expected to touch $260 billion by 2020.

STATEMENT OF THE PROBLEM

Good health is pre- requisite to human productivity and the development process. It had been very aptly stated "any society should consider that a high quality of life and I dare say happiness of people, which can only be obtained through a sufficient level of health is not only a pre-requisite for development but should be the basic objective of any development effort"(Kraivixien Tharsis, The Prime Minister of Thailand)[1]. The environmental impact of health care and the puzzle of sustainability raise ethical questions regarding health care's environmental stewardship. Concern for the health of the earth's ecosystems suggests that health care institutions and practitioners should reassess their practices in order to soften or eliminate harmful effects. At the same time, they have to balance their environmental responsibilities with their obligations to serve the immediate needs of patients. Addressing the issue of balance requires combining considerations from both medical ethics and environmental ethics. Hospital is a place where human illness is defined, diagnosed and treated for, whereby restoration of health and well-being is made for those deprived of it temporarily.

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A large number of professionally and technically qualified people apply their knowledge and skill with the help of complicated equipment and appliances to produce quality care for patient. Thus, The researcher intense to study the different strategies adopted and problems in availing environmental sustainable treatment in health care organization.

OBJECTIVES OF THE STUDY

1. To study the level of various Environmental sustainable strategies adopted in select hospitals in Coimbatore district.
2. To suggest improvements in environment sustainable treatment for better patient satisfaction in select hospitals in Coimbatore district.

REVIEW OF THE LITERATURE

María Carmen Carnero (2015)[1] this study examines that "Healthcare organizations should set a standard in corporate social responsibility and encourage environmental sustainability, since protection of the environment implies the development of preventive measures in healthcare". There is no objective model for assessing the environmental sustainability of HCOs in such a way that the results may be compared over time for an organization, and between different organizations, to give a comparison or benchmarking tool for HCOs. This paper presents a Multi-Criteria Decision Analysis model integrating a Fuzzy Analytic Hierarchy Process and utility theory, to evaluate environmental sustainability in HCOs.

EdytaBombiak (2018)[2] this study examines the growing role of sustainable development and, its ecological aspect, in the development of modern company competitive edge leads to the popularization of the question of incorporating environmental practices into the area of human resource policy, referred to as Green HRM. The objective of the research was to identify pro-environmental HR practices embraced by young Polish enterprises and to prioritize them in accordance with their effect on company sustainable development. To attain these goals, a survey was conducted among a random, representative population of 150 young enterprises. The study revealed that the Green HRM concept in the Polish reality is relatively.

SCOPE OF THE STUDY

The current study analyzes the various strategies adopted in environmental sustainable treatment, which will be useful to the Healthcare organization. The healthcare organization will develop or rebuild the weaker portion of the environmental sustainable treatment to patients. The study will be more helpful for the hospital's growth in developing a better environmental sustainable treatment to satisfy the patients. It is the real testimony to the efficiency of hospital administration.

RESEARCH METHODOLOGY

The present study is an empirical research based on the primary data collected from the patients of the selected hospitals in Coimbatore city. For the purpose of collection of data, interview schedules were prepared separately to cover patients. The interview schedules are prepared in such a way that they are simple and understandable to enable the respondents to express their opinions freely and frankly. Adequate care has been taken to collect unbiased data from the respondents. Thus, the collected data were analyzed using various statistical tools such as Mean score analysis and Rank analysis.

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RESULTS AND DISCUSSION

MEAN SCORE ANALYSIS

The researcher has used mean score analysis to determine level of various Environmental sustainable strategies adopted in select hospitals in Coimbatore district. The environmental sustainable strategies were adopted on a five point Likert scale. The result of mean score analysis were given below:

MEAN SCORE ANALYSIS OF WASTE MANAGEMENT SYSTEM ADOPTED IN SELECT HOSPITALS

WASTE MANAGEMENT SYSTEM	N	MEAN	SD	Mean Rank
The hospital adopts separate bin system for collecting waste	250	4.41	.733	1
The hospital does not dump the waste in open areas	250	3.58	.872	6
The hospital clearly describes the safety procedures in handling wastes	250	3.48	.854	7
The hospital management educate staffs on the importance of waste management	250	4.38	.633	2
The waste management of hospital is outsourced to external agencies	250	4.25	.807	4
The rooms are cleaned and waste materials are removed twice every day	250	3.82	1.284	5
The patients are made aware of waste management policies of the hospital	250	4.34	.691	3
Average mean score= 4.037				

Source: Primary Data

The above Table shows the descriptive statistics of waste management system followed in select hospitals in Coimbatore district. The result shows that 'The hospital adopts separate bin system for collecting waste' is having high mean value of 4.41 followed by 'The hospital management educate staffs on the importance of waste management' (mean score= 4.38). The third rank was retained by 'The patients are made aware of waste management policies of the hospital' (mean score= 4.34). 'The waste management of hospital is outsourced to external agencies' (mean score=4.25) has the fourth rank and 'The rooms are cleaned and waste materials are removed twice every day' (mean score=3.82) retained the fifth rank. 'The hospital does not dump the waste in open areas' (mean score= 3.58) stood at sixth position and 'The hospital clearly describes the safety procedures in handling wastes' (mean score= 3.48) retained the seventh rank.

MEAN SCORE ANALYSIS OFMANAGEMENT OF HAZARDOUS SUBSTANCES ADOPTED IN SELECT HOSPITALS

MANAGEMENT OF HAZARDOUS SUBSTANCES	N	MEAN	SD	Mean Rank
Hazardous waste are appropriately classified by the hospital management	250	4.22	.849	7
The detailed list of different hazardous waste handling is provided in every room	250	4.37	.718	1
Patient are not exposed near the hazardous waste management areas	250	4.33	.918	3
Proper warning against hazardous items are provided by the management	250	4.34	.977	2
Hazardous waste of the hospital are handled at site away from human	250	4.27	.773	6

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habitat				
The hazardous waste is handled with due care by the hospital authorities	250	4.31	.918	5
The hospital has sufficient provision for managing hazardous waste	250	4.32	.849	4
Average Mean Score = 4.308				

Source: Primary Data

The above table shows the descriptive statistics of management of hazardous substances followed in select hospitals in Coimbatore district. The result shows that 'The detailed list of different hazardous waste handling is provided in every room' is having high mean value of 4.37 followed by 'Proper warning against hazardous items are provided by the management' stood (mean score = 4.34).The third rank was retained by 'Patient are not exposed near the hazardous waste management areas' (mean score= 4.33). 'The hospital has sufficient provision for managing hazardous waste' (mean score = 4.32) has the fourth rank and 'The hazardous waste is handled with due care by the hospital authorities' (mean score =4.31) retained the fifth rank. 'Hazardous waste of the hospital are handled at site away from human habitat' (mean score=4.27) stood at sixth position and 'Hazardous waste are appropriately classified by the hospital management' (mean score of 3.48) retained the seventh rank.

MEAN SCORE ANALYSIS OF ENERGY CONSERVATION ADOPTED IN SELECT HOSPITALS

ENERGY CONSERVATION	N	MEAN	SD	Mean Rank
The hospital is committed inenergy conservation for sustainability	250	4.37	.718	2
The hospital has replaced light bulbs with CFLs and LEDs wherever possible	250	4.31	.613	5
The hospital uses smart power strips that reduces power consumption during activity	250	4.35	.863	3
The hospital uses energy efficient equipment and machinery for various purposes	250	4.32	.703	4
The hospital provide Pamphlets in every room regarding energy conservation	250	4.18	.987	7
The hospital has efficient window system that can reduce heat	250	4.29	.673	6
Window shades, shutter and screen are used to insulate the room from external temperature	250	4.39	.794	1
Average Mean Score = 4.316				

Source: Primary Data

The above table indicates the descriptive statistics of energy conservation followed in select hospitals in Coimbatore district. The result shows that 'Window shades, shutter and screen are used to insulate the room from external temperature' is having high mean value of 4.39 followed by 'The hospital is committed in energy conservation for sustainability' (mean score= 4.37).The third rank was retained by 'The hospital uses smart power strips that reduces power consumption during activity' (mean score = 4.35). 'The hospital uses energy efficient equipment and machinery for various purposes' (mean score = 4.32) has the fourth rank and 'The hospital has replace light bulbs with CFLs and LEDs wherever possible' (mean score = 4.31) retained the fifth rank. 'The hospital has efficient window system that can reduce heat'(mean score = 4.29) stood at sixth position and 'The hospital provide Pamphlets in every room regarding energy conservation' (mean score = 4.18) retained the seventh rank.

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MEAN SCORE ANALYSIS OF GREEN IMAGE ADOPTED IN SELECT HOSPITALS

GREEN IMAGE	N	MEAN	SD	Mean Rank
The hospital manages the environmental problems efficiently	250	4.31	.987	4
The hospital address the environmental issues and take concrete environmental actions to tackle the issues	250	4.11	.644	6
The hospital has true sustainable policies as its identity	250	4.09	.745	7
The hospital follows green trend in line with the industry	250	4.36	.857	2
The hospital use innovative product and practices to reduce environmental issues	250	4.21	.693	5
The hospital maintain a separate department for hospital waste management	250	4.41	.720	1
The hospital is against animal testing practices	250	4.32	.832	3
Average Mean Score = 4.258				

Source: Primary Data

The above table shows the descriptive statistics of green image followed in select hospitals in Coimbatore district. The result shows that 'The hospital maintain a separate department for hospital waste management' is having high mean value of 4.41followed by 'The hospital follows green trend in line with the industry' (mean score = 4.36). The third rank was retained by 'The hospital is against animal testing practices' (mean score =4.32). 'The hospital manages the environmental pressure efficiently' (mean score = 4.31) has the fourth rank and 'The hospital use innovative product and practices to reduce environmental issues efficiently' (mean value = 4.21) retained the fifth rank. 'The hospital address the environmental issues and take concrete environmental actions to tackle the issues' (mean value = 4.11) stood at sixth position and 'The hospital has true sustainable policies as its identity' (mean score = 4.09) retained the seventh rank.

MEAN SCORE ANALYSIS OF RECYCLABILITY MEASURES ADOPTED IN SELECT HOSPITALS

RECYCLABILITY	N	MEAN	SD	Mean Rank
Whenever possible reusable products are used instead of single use products	250	4.11	.675	3
Patients are provided awareness about recycling of possible materials	250	3.98	.757	4
The pharmacy and dispensaries use eco-friendly packages	250	4.32	.895	2
The canteen and stores have zero tolerant for plastics	250	4.71	.982	1
Average Mean Score = 4.28				

Source: Primary Data

The above table indicates the descriptive statistics of recyclability measures followed in select hospitals in Coimbatore district. The result shows that 'The canteen and stores have zero tolerant for plastics' is having high mean value of 4.71 followed by

'The pharmacy and dispensaries use eco-friendly packages' (mean score = 4.32). The third rank was retained by 'Whenever possible reusable products are used instead of single use products'(mean score = 4.11)

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and 'Patience are provided awareness about recycling of possible materials' (mean score =3.98) retained the fourth rank.

MEAN SCORE ANALYSIS OF STANDARD OPERATING PROCEDURE
ADOPTED IN SELECT HOSPITALS

STANDARD OPERATING PROCEDURE	N	MEAN	SD	Mean Rank
The hospital management works in line with Tamil Nadu state laws	250	4.32	.786	2
The hospital has color code container that ensure appropriate separation of waste	250	4.54	.840	1
The hospital uses visual reminder and pictograms to classify wastes	250	4.21	.666	3
The hospital has periodic waste audit and provides pre training if necessary	250	4.01	.769	4
Average Mean Score = 4.27				

Source: Primary data

The above table indicates the descriptive statistics of standard operating procedures followed in select hospitals in Coimbatore district. The result shows that 'The hospital has color code container that ensure appropriate separation of waste' is having high mean value of 4.54 followed by 'The hospital management works in line with Tamil Nadu state laws'(mean score = 4.32). The third rank was retained by 'The hospital uses visual reminder and pictograms to classify wastes' (mean score =4.21 and 'The hospital has periodic waste audit and provides pre training if necessary' (mean score = 4.01) retained the fourth rank.

MEAN SCORE ANALYSIS OF GREEN BUILDING INITIATIVE
ADOPTED IN SELECT HOSPITALS

GREEN BUILDING INITIATIVE	N	MEAN	SD	Mean Rank
The hospital adopts environmentally responsible design for the buildings	250	4.28	.767	2
The layout of the hospital is resource efficient	250	4.10	.886	7
The hospital has improved indoor environment quality	250	4.27	.976	3
The hospital does not have potential liability resulting from indoor air quality problems	250	4.23	.675	5
Green aspects is visible in every aspect of hospital architecture and construction	250	4.26	.609	4
The hospital interiors are done with green materials that reduces allergy and other illness	250	4.41	.982	1
The hospital is built on appropriate site only based on existing regulation.	250	4.14	.739	6
Average Mean Score = 4.241				

Source: Primary data

The above table shows the descriptive statistics of green building Initiative followed in select hospitals in Coimbatore district. The result shows that 'The hospital interiors are done with green materials that reduces allergy and other illness' is having high mean value of 4.41 followed by 'The hospital adopts environmentally responsible design for the buildings' (mean score = 4.28). The third rank was retained by 'The hospital has improved indoor environment quality' (mean score = 4.27). 'Green aspects is visible in every aspect of hospital architecture and construction' (mean score = 4.26) has the fourth rank and 'The hospital is built on appropriate site only based on existing regulation' (mean score = 4.14)

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stood at fifth position and finally 'The layout of the hospital was resource efficient' (mean score = 4.10) retained the sixth rank.

RANK ANALYSIS

The researcher analyses the various problems faced by the patients while availing environment sustainable treatment in select hospitals in Coimbatore district. The researcher had used rank analysis for this purpose.

PROBLEMS FACED BY THE PATIENTS IN AVAILING ENVIRONMENTAL SUSTAINABLE TREATMENT

S. No.	Problems faced by the patient in Environmental Sustainable Treatment	No. of Respondents	Avg.Score	Rank
1	Patient has to spent more costs for getting environmental sustainable treatment in the hospital	93	37.2	1
2	Absence of environmental sustainable lab facilities in the hospital	35	14.0	3
3	Unhygienic environment in the operation theatre, it affects the health of the patients	12	4.8	6
4	Lack of cleanliness in the hospital environment for sustainable treatment	23	9.2	5
5	Absence of proper disposing medical wastes in hospital environment	28	11.2	4
6	Lack of environmental stewardship in their quality health care services	59	23.6	2

Source: Primary data

The above Table shows the problems faced by the patients in environmental sustainable treatment in select hospitals in Coimbatore district. The result shows that 'Patient has to spent more costs for getting environmental sustainable treatment in the hospital' is having high average score of 37.2 followed by 'Lack of environmental stewardship in their quality health care services' (average score = 23.6). The third rank was retained by 'Absence of environmental sustainable lab facilities in the hospital' (average score = 14.0). 'Absence of proper disposing medical wastes in hospital environment' (average score = 11.2) has the fourth rank and 'Lack of cleanliness in the hospital environment for sustainable treatment' (average score = 9.2) stood at fifth position and finally 'Unhygienic environment in the operation theatre, it affects the health of the patients' (average score = 4.8) retained the sixth rank.

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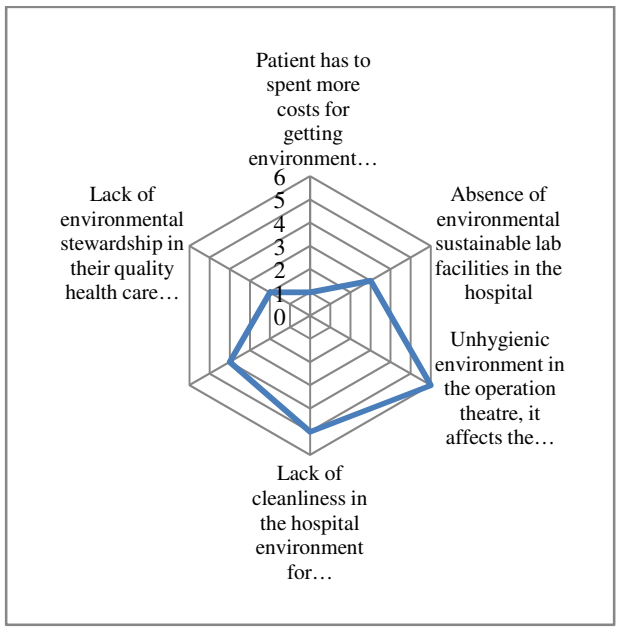

CONCLUSION

Environmental sustainable treatment is a journey of continuous performance improvement for environmental sustainability. Waste management programs and changes in consumption trends can help the healthcare organizations to reduce the amount of waste it generates, saving on both handling and disposal costs and providing environmental benefits. Health care organizations can reap multiple benefits and fulfill their goals/missions by tapping the tremendous power of environmental sustainability. Before setting goals and commitment, every healthcare organization should examine the organizational goals behind sustainability efforts. This study analyzed the various environment sustainable strategies of select hospitals in Coimbatore district. Each healthcare organization should find its own path on the journey to environmental sustainability.

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