

The Readiness Level of the Medical Services Centers in the Establishment and Implementation of Green Hospital Standards in Rasht

*Movaafegh MR (MA)¹- Hosseini M (PHD)¹- Ali MohammadZadeh Kh (PHD)¹

*Corresponding Email Address: Department in Health Services Management at Islamic Azad University, North Tehran Branch, Iran

Email: salarmovafegh@yahoo.com

Received: 20/Nov/2018 Revised: 24/Jul/2019 Accepted: 15/Sep/2019

Abstract

Introduction: Hospitals are among the service centers that cause the greatest environmental pollution. Green Hospital refers to a hospital that views the environment as part of its service quality processes and seeks to avoid harming itself and others by employing effective approaches in each of its dimensions including management, water, energy, buildings, waste, medicine, and shopping.

Objective: This study aims to determine the extent of medical services centers readiness for the establishment and implementation of Green Hospital standards in Rasht.

Materials and Methods: This is an applied research, and a descriptive cross-sectional method is used. Also, survey method is implemented. The statistical population of this study included all public and private hospitals in Rasht. Among them, 8 hospitals were selected as the sample using convenient sampling method. The data collection tool was the hospital checklists, obtained through observation and interviews. The checklist information consists of two parts, demographic information and information about seven variables in the green hospital, in which respondents should state their hospital readiness in each part of the green hospital checklist. SPSS statistical software was used to analyze the data. Also, descriptive statistics (Frequency distribution and percentage and mean) and analytical statistics (t-test, Kolmogorov-Smirnov, etc.) were used.

Results: The results indicated that the 8 under studied hospitals were not in good condition regarding the relevant standards of the green hospital (the rate of meeting standards was 36.8%). Also, these hospitals are not prepared to implement green hospital standards. Only given the drug use (score 65.6), they meet green hospital standards; however, they are not in the right position for the establishment of a green hospital in terms of energy management; waste management; water conservation (score 34); use of chemicals (score 43); green architecture (score 35) and purchasing Hospital Requirements (23.2 points).

Conclusion: Green hospital standards are of critical importance in sustainable management and cost saving for hospitals. Apart from the general discussion of green buildings, meeting these principles in hospitals, in addition to its sustainability aspects, has a significant role in improving the patient's therapeutic quality. Implementation of such standards in the province requires a comprehensive planning of the 7 under-studied variables and clarification of relevant guidelines and rules, training and documentation of actions.

Conflict of interest: non declared

Key words: The Readiness\ Standards Implementation\ Green Hospital\ Health Care Centers

Journal of Guilan University of Medical Sciences \ Volume 29, Issue 1, (No 113), Pages: 11-21

Please cite this article as: Movaafegh MR, Hosseini M, Ali MohammadZadeh Kh. The Readiness Level of the Medical Services Centers in the Establishment and Implementation of Green Hospital Standards in Rasht. J of Guilan University of Med Sci 2020; 29(1):11-21.

Extended Abstract

Introduction: Today, consequences such as increasing environmental and air pollution as well as energy crisis have made conservation and protection of natural resources, as one of the most important concerns of humanity. Hospitals are service centers that cause the most environmental pollution. The Green Hospital refers to a hospital that views the environment as part of its service quality processes and seeks to protect itself and others by employing effective approaches in every dimensions including management, water, energy, buildings, waste, medicine and shopping.

Objective: Considering the importance of green management in hospitals, this study examines the readiness of medical centers to establish and implement green hospital standards. The main question is: How much is the Rasht Medical Center ready to establish and implement Green Hospital standards?

Materials and Methods: This is an applied and descriptive cross-sectional study which takes advantage of a survey method. Data collection tool is the Green Hospital Checklist, adapted from the study by Reller (2008) used by Shaabani et al. (2018). The aforementioned checklist was of a two-choice type (yes / no) which was rated 1 for no and 2 for yes. Here the comparison criterion is the sum of the scores obtained if the respondent answers yes to all questions. So overall score of this checklist is 206. Each of the under studied standards has its own ratings. The checklist examines the status and readiness of selected hospitals and clinical centers in terms of how they manage energy consumption, waste management, water conservation status, chemical use status, drug use status, green building status, and purchase status of medical supplies. The statistical population of the study includes all hospitals in Rasht. The total number of the population includes the management of all hospitals in the province (including quality control managers, nursing managers, clinical governance managers, health experts, facility experts, accounting, etc.). Information analysis is performed using two types of statistical analysis. Descriptive analysis is performed using data descriptions by mean, standard deviation, and percentages and inferential data analysis by using appropriate statistical methods and tests such as Kolmogorov-Smirnov, independent t-test and variance analysis. The whole process of analysis is done by Spss software.

Results: Regarding the first hypothesis, the results indicate that from the energy management point of view, health care centers of Rasht with 18.7% are in poor condition for green hospital establishment which should be considered as the first priority for improvement. This hypothesis was not confirmed. The second hypothesis of the researcher is that in terms of

waste management, health care centers of Rasht with a score of 43.9% are in poor condition for green hospital establishment which should be considered as a fifth priority for improvement. This hypothesis was also rejected, with this figure being 56.7% in the study by Ebadi Azar et al. (2015) (13). Based on the results, as for the third hypothesis, it was found that in terms of water conservation, the health care centers of Rasht with a score of 34% are not in a good condition for green hospital deployment, which should be considered as a third priority for improvement. This hypothesis was not supported, and the result was in line with the studies of Fahravi (2011) (14). Also, in terms of chemical use, health and medical centers of Rasht with a score of 43% are in poor condition for the establishment of green hospital. Thus, the fourth hypothesis of the research was not approved, which was consistent with the research of Chiu et al. (2009).

The fifth hypothesis of the study showed that in terms of drug use, 65.6% of health care services in Rasht are in relatively good condition for establishing a green hospital, in agreement with the results of Ebadi Azar et al (2015) (37) and Arzmani et al (2017) research (2).

The sixth hypothesis of the study was also rejected and the results showed that in terms of building (Green Architecture) Rasht city health center with a score of 35.5% are in a very unsuitable condition for green hospital establishment. More than half of the hospitals in this study (62.5%) were over 20 years old, in line with the study by Ebadi Azar et al (2015) that was 53%. Compared with the results of Arzmani et al (2017) (Table 5), it can be said that our results are in line with the results of the aforementioned research. Looking at the difference between the ratings of the under-studied hospitals in terms of green hospital standards, we find that none of the under studied hospitals are in a good position regarding the establishment of green hospital standards.

Conclusion: The results showed that in seven dimensions of green hospital such as purchase of hospital supplies; building (green architecture); drug use; chemical use; water conservation; waste management and energy management, the under studied hospitals are not in a good position to establish a green hospital, and these centers need to make comprehensive planning for the seven under studied variables to properly manage green hospital standards and save energy and resources. More importantly, careful planning in energy management, hospital supplies purchasing, water use management, building improvement and waste management are required. In doing so, training and commitment of managers as well as personnel in the implementation of programs is critical. Also, in terms of demographic characteristics such as: hospital age; hospital area; number of beds;

number of staff; number of nurses, and the number of physicians, it is in poor condition for establishing green hospital standards. Lack of adequate communication and training due to lack of technology and financial resources has led to lack of environmental review in hospitals. Also, lack of awareness about the importance

and benefits of hospital management programs and the establishment of green hospital standards due to unwillingness to participate, lack of motivation and lack of education are considered as the most important reasons.

References

1. Shamgholi, Gholamreza and Yekta, Hamed (2009) Green Hospital, Sustainable Approach to Design of Health Centers, presented at the first Sustainable Architecture Conference, available at: https://www.civilica.com/Paper-NCSUSTAINARCH01-NCSUSTAINARCH01_029.html
2. Arzmani, MasoumehSadeghi, Shahram and Nasiripour, Amir Ashkan (2017) Evaluation of Green Hospital Standards in the Treatment Centers of North Khorasan University of Medical Sciences in 2016, Journal of Management Strategies in Health System, Volume 2, Number 2, Summer, Consecutive Issue 4, 128-118.
3. Pashangpour, Soheila and Shahram Hafiz (2015) Evaluation of the Benefits of Achieving Green and Healthy Hospital Standards and Their Impact on Energy Planning from a Sustainable Architecture Perspective, Third International Congress on Civil, Architecture and Urban Development, Tehran, Permanent Secretariat International Congress of Civil, Architecture and Urban Development, ShahidBeheshti University, https://www.civilica.com/Paper-ICSAU03-ICSAU03_0780.html
4. ZanganehGheshlaghi, FatemehMohebifar, Rafat&Kalhor, Rouhollah (2015) Evaluation of Hamedan Province Hospitals Based on Green Hospital Criteria in 2015, Master of Science Degree in Health Services Management, University of Medical Sciences and Services Qazvin University of Medical Sciences, School of Public Health and Paramedical Sciences.
5. Saleh Ali Taleshi, Mohammad NejadKorki, Farhad ;Azimnejad, Hamid Reza Ghaneian, Mohammad Taghi and Naayandeh, Seyyed Mahdi (2014) Achieving Green Hospital Standards in Yazd Teaching Hospitals in 2013, Scientific Journal of Ilam University of Medical Sciences, Volume 22, Issue 5, October, pp127-114.
6. Granly BM, Welo T. EMS and sustainability:experiences with ISO 14001 and Eco-Lighthousein Norwegian metal processing SMEs. Journal ofCleaner Production 2014; 64: 194-204. doi:tp://dx.doi.org/10.1016/j.jclepro.2013.08.007.
7. Carpenter D. Green and Greener, hospitalsembrace environmentally sustainablepractices, though laggards remain. SustainableOperation Groups.Hf Magazine;2010. P. 15-20.
8. Yunhu L. Conception of the Green Hospital in the "Apricot Woods"[J]. ARCHITECTARAL JOURNAL 1997; 12: 2014. Downloaded from
9. Joshua KarlinerJaG. A Comprehensive Environmental Health Agenda for Hospitals and Health Systems around the world. Health Care Without Harm <http://noharmorg/lib/downloads/building/GGHHApdf>. 2011.
10. WHO. Healthy Hospitals, Healthy Planet, Healthy People. Addressing climate change in health care settings.Health Care Without Harm; 2012: 1
11. Reller A. Greener hospitals, improving environmental performance. Environment Science Center, Augsburg, Germany With support from: Bristol Myers Squibb Company; 2008. P. 1-52.
12. Terrados J, Almonacid G, Hontoria L, 2007, Regional energy planning through SWOT analysis and strategic planning tools: Impact on renewables development. J Renew Sustain Energy Rev; 11: 1275-8
13. EbadiAzar F, Farzianpour F, RahimiForoushaniA, Badpa M, Azmal M. Evaluation of GreenHospital Dimensions in Teaching and PrivateHospitals Covered by Tehran University of Medical Sciences. JSSM 2015; 8(2): 259-66. doi:10.4236/jssm.2015.82029.
14. Farrokhsahi, 2011, Evaluation of Green Hospital Model Accreditation Standard in Selected Hospital of Kermanshah
15. Carpenter D, Hoppszallern S. 2010, Green + Greener.Hospitals embrace environmentally sustainablepractices, though laggards remain. Health FacilManage; 23(7): 15-21. PMID: 21638950.
16. Chiou ST, Chen LK., 2009, Towards age-friendly hospitals and health services. Arc Gerontol Geriatrics; 5:53-6.
17. Jongwutiwes N, Thiengkamol N, Thiengkamol T, 2012, Development of HospitalEnvironmental Management Model through PAIC Process.Mediter J SocSci; 3: 303-10.
18. Shabani, Y. VafaeNajjar, A. Meraji, M. Hooshmand, A., 2018, Green Hospital Model Design for Iran, Health Management, 21 (72): 76-64.
19. Arimura TH, Hibiki A, Katayama H. Is a voluntary approach an effective envi-ronmental policy instrument? A case for environmental management systems. J Environ Econom and Manag 2008; 55: 281-95.