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Nursing managers' knowledge regarding green management in a selected hospital

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Abstract:
Background*: "Green healthcare" and "green management" are two terms that have been frequently used to describe sustainability in the healthcare sector. This perspective emphasizes how important green healthcare is for maintaining productivity.The study aimed to assess nursing managers' knowledge concerning green management.*
Materials and Methods*: An exploratory descriptive study design was used. A purposive sample of 65 different categories of nurse managers' positions. A developed green management questionnaire was utilized to gather the data.* ***Results****: The key finding of this study is that the majority of the studied group has a poor level of knowledge regarding green management, and there was no significant difference in their experience with their knowledge level.* ***Conclusion:****All nurses' managers need to be aware of the green management concept, their role as managers, and how to apply it.This study recommends a further study of an applied educational program to enhance nurses' and managers' knowledge regarding green management.*
Key Word*: green management, nurse managers, health care organizations.*

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I. Introduction

Because of the worldwide pandemic, geopolitical tensions, climate change, chemical pollution, managerial crisis, and misuse of scarce resources, the corporate environment today is unstable. Climate change is particularly problematic since it has a negative impact on human health and causes an increase in linked diseases that put a burden on healthcare systems. [2]

In order to maintain a sustainable environment, the WHO has underlined the importance of bolstering the health system, appropriate research, and critical initiatives. Particularly, it is anticipated that the healthcare industry would be essential in reducing the negative consequences of the weather revolution on human health. [1] Recognizing the necessity of acknowledging the connection between interpersonal relationships and environmental health, green healthcare seeks to simultaneously limit harmful personal and environmental effects and eradicate diseases. [16, 9]

Because the healthcare sector requires a lot of resources, it has an adverse effect on both humans and the environment.[4]Healthcare facilities are an example of an energy-intensive institution. Healthcare companies have been working to preserve high-quality care services, stop the spread of diseases, and sustainably operate organizations. In this context, the idea of a "green healthy environment" was created. [6],[15]. In addition, the newly developed idea of "green management" is intended to address issues with energy use, appropriate communication, managing conflict, proper waste management, and maintaining an atmosphere that curtails jeopardies to patients, employees, and confined societies. [5, 14].

Green health care also includes the idea of eco-friendliness, indicating that it offers environmentally friendly care services with the intention of not only enhancing individual health but also having a positive impact on the neighborhood. Additionally, by lowering waste and operating expenses and raising consumer knowledge of the significance of sustainability, green healthcare can add economic value.[8,13]

Additionally, it seeks to promote the development of a sustainable ecosystem in order to further the common good.[10]Despite these benefits, however, the adoption of green management requires highly qualified executives, and actual research on green management in healthcare practices is scarce.

Work-related training procedures, the function of linked departments (such as advertising and process administration), and employee participation are all emphasized by a pioneering management strategy for continuous enhancement. [11, 18]the involvement and dedication of all employees are essential when using TQM as the basis for developing active plans for green management.

Today, maintaining sustainability in the healthcare industry is difficult. [19]Sustainability is defined as "the pressing desire to safeguard and improve the whole atmosphere," which is a key issue that impacts the

general welfare of people and fiscal advancement around the world. As a result of their interdependence in a causal system, "atmosphere" and "progress" are not separate units, according to the Report.[7]According to this research, sustainable development is "a process of transformation that boosts both present and future capacity to satisfy human wants and aspirations by integrating resource exploitation, investment strategy, technical development direction, and institutional reform.[1.] Presented in further detail a "triple bottom line" (TBL) method based on ecological and social responsibility aspects to achieve sustainability.

Since its adoption in the healthcare sector in the form of "green management" and "green healthcare," sustainability has received extensive application. [4.] "enhancing the placement, design, construction, use, and removal of buildings to minimize their detrimental effects on human health and the environment, as well as their energy, water, and all resource efficacy," according to scholars and organizations' green healthcare makes it possible for physicians, patients, and the environment to have a sustainable future. These opinions stress the vital role that green healthcare plays in enhancing the wellbeing of individuals, groups, and the environment.[2]proposed that by minimizing environmental negative impressions and accepting responsibility for sustainable disease treatment operations, the practice of green healthcare facilitates a healthy life. Although the concept of green management is a global and innovative concept in health care, it needs to be empirically tested even in a small unit. Therefore, the current study aimed to assess nursing managers' knowledge regarding green management.

II. Material And Methods

This descriptive exploratory study was carried out on nurse managers'work in a selected Egyptian hospital from February 2022 and ended in April 2022.A total 65participant (both male and females) of aged ≥ 20, years were for in this study.

Study Design:A descriptive exploratory research design was used in this study.

Aim of the study: The study aimed to assess nursing managers' knowledge regarding green management.

Research questions:

What is the nursing managers' level of knowledge regarding green management?

Is there a relationship between level of knowledge and experience of the nursing managers?

Study Location: this study was conducted in in a selected Egyptian university hospital.

Study Duration: started from February 2022 and ended in April 2022.

Sample size: 65nurse manager.

Sample size calculation: a purposive sample of male and female nurse managers in different categories. They requested to take part in the current research.

Subjects & selection method: The current study will include participants who meet the following inclusion criteria in addition to that:

Inclusion criteria:

Only bachelor's and technical institute degrees are available.

1. Work at any manager's level (charge, head nurse, supervisor, director, etc.)
2. Full-time hired.
3. worked in the hospital for at least 5 years continuously.
4. The applicant must be at least 25 years old and no older than 50 years old.
5. first-time participants in this course

Exclusion criteria:

1. newly hired managers.
2. their age less than 20 years old
3. graduated from secondary nursing schools.
4. had training program about green management previously.
5. part time nurses.

Procedure methodology

After the data collection tool was created, validated, and put through a pilot study, the reliability of the data was tested using the Cronbach's alpha test. (The total result was 87%), which indicates that the current study's findings are nearly reliable, and the questionnaire's items are internally consistent. The current investigation was carried out according to a set procedure that was started with official permission. Once permission was granted for the study to be carried out, the researcher began to gather the necessary data. In order to determine the viability, objectivity, and applicability of the study instruments, the researcher conducted interviews with participants who agreed to take part in the study after describing its nature, purpose, and relevance. In addition, the time required to complete the data collection forms must be calculated.

Everyone who completed their own copy of the self-administration questionnaire on employee satisfaction When an employee agreed to participate, the researcher handed them the questionnaire by hand and instructed them on how to complete it. The researcher sat with the participants while they completed the questionnaire, answering any questions or providing clarification as needed. Then, the researcher took the filled-out questionnaire at the same time after it had been filled out. The participants took between 2 and 3 minutes to fill out the self-administered sheet. And there was no modification so that the 7 nursing managers who participated in the pilot study were drawn from the actual total study sample. After five days, the researcher started to collect the rest of the sheets (90%) for one hour but not on a daily basis. This process of data collection started in February 2022 and ended in April 2022.

Statistical analysis

Data was analyzed using SPSS version. Needed descriptive (number, percentage and frequencies) analysis and inferential statistics (Annova) was used to ascertain the significance of differences between mean values of the group experience and level of their knowledge

III. Result

The findings of the study were presented in three major sections:
Section I: percentage distribution of socio-demographic characteristics of the studied sample
Section II: frequency distribution regarding nurse managers' level of knowledge of green management (answering research questions)
Section III: relationship between level of knowledge and the participant's educational level and their experience and age (an additional finding)
Section I: percentage distribution of socio-demographic characteristics of the studied sample

Table no 1 Frequency distribution of socio-demographic data of the studied sample (n= 65)

Item	No	%
Gender		
Male	7	10.4
Female	59	89.6
Age		
20<30	8	12.2
30<40	10	15.8
40<50	35	53.5
50≥60	12	18.5
Total	65	100
Experience		
Less than 5 years	0	0
5<10	3	4.6
10<15	4	6.2
15-<20	8	12.2
20<30	45	69
30≥40	5	8
Total	65	100
Qualification		
Technical institute	43	66
bachelor	20	30
postgraduates	2	3
Total	65	100

Table no 1: showed that more than 85% of the studied sample were female, the majority of their age ranged between 40 and 50 years old, approximately two thirds of them had experience from 20 to 30 years ago, and the highest percentage of them graduated from technical nursing schools.

Table no2 Frequency distribution regarding nurse managers' knowledge of green management (n = 65)

	Oriented		Not sure		Disoriented	
	No	%	No	%	No	%
Manager Role	11	17	15	23	39	60
Employee participation	13	20	17	30	35	53
Education& training	15	23	13	21	37	56

Continuous improvement	10	15	19	30	36	55
Environmental performance	9	14	20	31	36	55
Monitoring activities/systems	7	11	24	37	34	52

Table no 2: showed that the majority of the study sample was disoriented by all the green management factors, especially manager role, education and training, and environmental performance (660%, 56%, 55%). Furthermore, only 20% of green management is focused on employee participation as a factor.

Table no 3. Nurse Managers' Level of Knowledge Regarding Green Management

Level of knowledge	No	%
Unsatisfactory level	41	63.6
Satisfactory level	24	36.4

Table no 3: clarified thatthe majority of participants (63.6%) had inadequate knowledge, while only 36.4% were knowledgeable about green management.

Table no 4. Difference among the studied sample in relation to their years of experience and their total knowledge score (n = 65)

	Sum of Squares	df	Mean Square	F	p
Between Groups	23.977	3	5.39	.019	.786
Within Groups	76832.783	234	129.602		
Total	78857.760	289			

Table no 4:showed that there was no statistically significant difference in knowledge scores between the studied groups based on their years of experience.

IV. Discussion

This study tried to identify nurse managers' knowledge about their role in implementing effective green healthcare. Thisknowledgeis critical for the implementation of green healthcare because of the roles of nurse managers, employee involvement, employee education and training, employee monitoring activities, continuous improvement activities, and environmental performance.

The results of this study indicated that the majority of the sample were female and ranged in age from 40 to 50 years old. Furthermore, the study clarified that participants were confused about their role and the general concept of "green management," which could be due to a lack of updated training, no encouragement of employees to participate in green activities, a weak regulatory framework in the organization's administration, a lack of funds or budget for purchasing environmentally friendly products, or it could be due to vague environmental regulations. Too, the hospital management is not entitled to operational initiatives that could effectively encourage its personnel to take part and engage in green healthcare activities, which are mentioned in the plan. No one in top management has demonstrated a strong commitment to or involvement in green healthcare initiatives, such as the establishment and upkeep of clear work standards or the creation of environmental programs.

By reducing pollutants across all of their healthcare services, hospitals can not only support environmental sustainability, but also improve their reputation as socially responsible businesses. Furthermore, hospitals can lower their operating expenses by pursuing ongoing green healthcare improvement initiatives. Therefore, in order to improve organizational performance, healthcare institutions should work toward long-term green healthcare initiatives.

The current study was incongruent with a previous study conducted by. [17.], in which the author made the argument that managers' and employees' involvement in continuous improvement initiatives had a favorable effect. Therefore, by employing green concepts, practices, and/or systems, continuous improvement activities can be developed efficiently and effectively using green healthcare education, preparation, and supervision of activities.

Furthermore, this study was not matched with the research performed b. [20]. Using structural equation modelling and data gathered from 261 employees at university hospitals, the proposed research model and related assumptions were put to the test. The study's findings showed that top management plays a crucial role in the employment of green healthcare ingenuities by inspiring staff members to actively participate in the program, providing ongoing education and training on the significance of environmental sustainability, and assiduously tracking organizational-level progress. The study's conclusions offer theoretical and practical

recommendations on how to strategically plan and carry out green healthcare initiatives in hospitals for the greater good.

Too, This study result was harmonious with the study that was conducted by.[21]to describe how nurses and nurse administrators reflect green principles in their day-to-day work, how well they recognize these principles, and how these principles are well-thought-out in problem-solving approaches by applying qualitative descriptive design. And the main result was that the principles of green management were poorly recognized among the study applicants. Nurse Managers considered their opportunities to influence decision-making abridged by their restricted familiarity. Finally, the author concluded that, as a result of this lack of knowledge, nurse managers do not actively consider those principles as part of their work.

The success of green healthcare enterprises in hospitals is also examined in a study that aligns with this one using TQM. Using structural equation modelling and data gathered from 261 employees at general hospitals in South Korea, the proposed research model and related assumptions were put to the test. And the main finding showed that top management's role is crucial for the effective implementation of green healthcare activities by encouraging staff members to actively participate in the program. It was also advised to offer ongoing education and training on the significance of green management as a key component of environmental sustainability. Imaginary and applied consequences of deliberate methods for planning and implementing green healthcare activities in hospitals for the greater good will be provided by further research, which will be put into action.[15]

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V. Conclusion

The current study concluded that the majority of the studied sample (nurse managers) had a dissatisfied knowledge level regarding green management, and there was no statistically significant difference in their experience with their knowledge level.Based on the conclusions of the present study, the following recommendations were assumed:

Further study on a large scale, including all Egyptian university hospitals, will be necessary to assess the level of knowledge at all managerial and administrative levels. An educational training program is to be applied to enhance nurse managers' knowledge regarding green management and sustainability in general.

Conflict of Interest

The authors declare no conflict of interest.

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