



# Green Human Resources Management in Healthcare: Challenges and Barriers

Eman Salman Taie<sup>1</sup>, Hossam Ali Ismail<sup>2</sup>, Dina Adel Gomaa<sup>3</sup>

1-Professor of Nursing Administration *Faculty of Nursing, Helwan University, Cairo, Egypt.*

2- Lecturer of Nursing Administration *Faculty of Nursing, Helwan University, Cairo, Egypt.*

3- B.Sc.Nursing Administration *Faculty of Nursing Helwan University, Cairo, Egypt.*

## Abstract

**Background:** Green human resources management is the alignment of established human resource practices with environmental goals and policies. It aims to achieve the environmental objectives of the organization, increase efficiency, reduce costs, and attract the best employees who are aware of sustainability processes. **Aim:** To assess challenges and barriers of green human resources management in healthcare as perceived by nurse managers. **Design:** A descriptive research design was used. **Setting:** The study was conducted at Elaraby hospital which is located at Ashmoun, Menoufia governorate. **Subjects:** The study subjects included all available nurse managers (N=50). **Tools:** Two tools were used for data collection, Tool 1: Green Human Resource Management Knowledge Questionnaire, Tool 2: Perceived Challenges and Barriers by Nurse Managers about Green Human Resource Management Questionnaire. **Results:** The majority of nurse managers had unsatisfactory level of knowledge about green human resource management. Also, Less than two thirds of nurse managers had positive perception about challenges and barriers of green human resource management. Finally, there was no statistically significant correlation between total perception and total knowledge about green human resources management among nurse managers. **Conclusion:** The highest percentage of nurse managers had a positive perception about challenges and barriers of green human resources management. **Recommendation:** Implement green human resources management policies and practices within the healthcare organization, integrate environmental sustainability goals into the organization's vision, mission and values. In addition, integrate environmental sustainability topics into nursing education curriculum to increase nursing students awareness about green management and environmental sustainability.

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**Keywords:** *Green human resources management, Challenges, Barriers, Nurse managers.*

## I. Introduction

Nowadays, the world requires people's welfare increase by providing economic growth, social welfare, technological and innovation development. Besides, this challenge links with ensuring the ecological safety which lays in sustainable development. Within the economic recovery framework, the countries should formulate an environmentally friendly and sustainable economy. It is necessary to implement decisive action to prevent harmful climate change around the world. Therefore, the economic entities investing in the green transformation would be more successful, while ones with the old economic system lose the market share (*Top et al., 2020; Doby & Singh, 2023*).



Green management at hospitals refers to the practice of implementing environmentally sustainable policies and procedures in the operation and management of healthcare facilities (*Aly Abd-Elhamid & Gaber, 2023*). To understand "Green Management" as a term there is a need to trace its origin. This concept developed gradually over time due to urgent need for increasing "environmental awareness" among people, as the world is witnessing aggressive violation towards the nature (*Elshaer et al., 2023; Saleh et al., 2023*).

Human resources or employees are the most critical asset of the organization and are responsible for bringing any changes in firms. Human resources management (HRM) is the essential activity that handles the employees, training them so that they perform their activities in a better way. Green human resources management (GHRM) is a new alternative to traditional human resources management. GHRM practices, policies, and frameworks create a green culture and help in the sustainability and preservation of the environment (*Malik et al., 2020; Martins et al., 2021; Aukhoon et al., 2024*).

Green human resources management is defined as the alignment of established human resource practices (such performance evaluation and training) with environmental goals and policies. When discussing recruitment, selection, training, performance evaluation, collaboration, and the environment, green human resources management is regarded as being equivalent to human resources management (*Pham et al., 2020; Ali et al., 2023; Gomes et al., 2023; Joshi et al., 2023*).

Green human resources management such as any new practice has challenges and barriers to apply. In that sense, these barriers could be absence of a comprehensive perception of the application of green human resources management, the availability of unskilled and unmotivated employees for implementation (*Birbirsra & Worku, 2022; Mohamed et al., 2022*).

Furthermore, implementation of green philosophy takes long time, needful a big investment at the beginning of applying (*Sapna & Gupta, 2021*). In addition, complexity in recruiting and training the new staff on green human resources management practices, difficulty in performance appraisal of staff behaviors, complexity in shifting employees' attitudes from normal one to the green in a short time and the absence of green thinking consider as major challenges and barriers facing implementation of green human resources management (*Mousavi et al., 2020; Tanova & Bayighomog, 2022; Senthilkumar et al., 2023*).

## II. Significance of the Study

Egypt is highly vulnerable to water scarcity, droughts, rising sea levels, and other adverse impacts of climate change. To support the move to a greener, climate-resilient economy, the Egyptian government recently launched the National Climate Change Strategy. The private sector is scaling up adaptation efforts and will play a key role in this transition. To develop the green finance market, Egypt has also issued the region's first sovereign green bond to finance projects in clean transportation and sustainable water management. As host of COP27, Egypt is also coordinating global action on climate adaptation, mitigation, and finance. In addition, Egypt's Vision 2030 gives importance to confronting the effects of climate change through creating a sustainable and thriving environment that contributes positively to the preservation and restoration of Egypt Natural Resources and Eco System and Inspiring others to take action towards a greener and more sustainable future (*Hamzawy et al., 2023; WYns., 2023*).

Green human resources management is being adopted rapidly by different organizations in order to develop an environmentally friendly organizational culture, and this will help minimize the environmental impacts in this advanced era of industrial development. Green human resources management will bring economic benefits, distinction and specifically advantages for human resources. Moreover, those organizations that have better environmental performances will have better image and will attract more potential employees. Implementation of



green human resources management aims to promote sustainable use of resources, strengthen environmental sustainability and will increase employee commitment to protecting the environment. In an era of increased attention to environmental sustainability, healthcare organizations are considering ways they can work to be more sustainable. The healthcare sector, therefore, is encouraged to take responsibility for its future environmental impact and engage in sustainability programs to achieve a better ecological balance (*Abdelrahman et al., 2023; Ab & Wahyuni, 2023; Allam & Mansour, 2024*).

### III. Aim of the study

The aim of this study was to assess challenges and barriers of green human resources management in healthcare as perceived by nurse managers through the following objectives:-

- 1- Assess nurse managers' level of knowledge about green human resources management.
- 2- Identify nurse managers' perceived challenges and barriers about green human resources management.

### Research questions

The research question of this study was formulated as the following

- 1- What is the nurse managers' level of knowledge about green human resources management?.
- 2- What are the nurse managers' perceived challenges and barriers of green human resources management in healthcare?.

### IV. Subject and Methods

#### Research design:

A descriptive research design was used in this study.

#### Setting:

The study was conducted at **Elaraby Hospital** which is a private sector and located at Abu Raqba – Ashmoun – Menoufia Government – Egypt. The hospital provides different services; inpatients, outpatients, dialysis, critical care units (for adults, pediatrics, neonates, and emergency department) and other departments (OR, radiology, endoscopy, cardiac catheterization and nursing office) . It consisted of (300) beds distributed in eight floors.

#### Subjects:

The study subjects included all nurse managers in Elaraby hospital (N=50) who had at least one year of experience as nurse managers in the current position and agreed to participate in the study during the time of data collection. In addition they did not attend a previous training about green human resources management.

#### Tools of data collection

Two tools were used for collecting data in this study.

**First Tool : Green Human Resource Management Knowledge Questionnaire:** It was developed by the researcher after reviewing the relevant literature (*Sobaih, 2019; Bombiak, 2020; Hamod & Majeed, 2021; & Tymbaliuk, 2021*) and consulting experts in related field. It consisted of two parts:

**Part 1: Personal data:** This part was used to assess personal data of nurse managers as age, gender, level of education in nursing, years of experience, working department and If he/she attended a previous training about green human resources management.



## Part 2: Green Human Resources Management Knowledge questionnaire:

This part was used to assess nurse managers' level of knowledge about green human resources management which consisted of a multiple-choice questions about green human resource management as definition of green human resource management, its importance and disadvantages of green human resource management practices...etc.

**Scoring system:** the total score is (14) with cut point at 10 points = 71%. Nurse Managers' responses were measured on two points, 2=correct and 1=incorrect.

The knowledge level was considered:

- Satisfactory level  $>71\%$  ( $>10$  points)
- Unsatisfactory level  $\leq 71\%$  ( $\leq 10$  points)

**Second Tool: Perceived Challenges and Barriers by Nurse Managers about Green Human Resources Management Questionnaire:** It was developed by the researcher after reviewing the relevant literature (*Sobaih, 2019; Bombiak, 2020 & Mousavi et al., 2020*) and consulting experts in related field to assess nurse managers' perceived challenges and barriers about green human resources management in healthcare. It consisted of (56 items) as the following:-

A- Nurse managers' perceived challenges about green human resources management which included (26 items) distributed on (3) dimensions as: organizational = 10 items, environmental =10 items, and employees =6 items.

B- Nurse managers' perceived barriers about green human resources management which included (30 items) distributed on (3) dimensions as: organizational =13 items, environmental =10 items, and employees = 7 items.

C- Scoring system: Nurse Managers' responses were measured on a 3-point Likert scale ranging from 3=agree, 2=neutral, 1=disagree,

D- The total score of perceived challenges and barriers about green human resources management is (168) with cut point at 118 points = 70%. The score was perceived as:

- Positively  $\geq 70\%$  ( $\geq 118$  points).
- Negatively  $< 70\%$  ( $< 118$  points).

## Validity of the tools:

Face and content validity for the study tools were done. Tools were translated into Arabic and were tested by a jury group of three experts specialized in nursing administration from three universities namely Tanta University, Menoufia University and Modern University for Technology and information through an opinionnaire sheet to measure the face and content validity of the tools. Face validity was done based on jury opinions which were elicited regarding the tools' format, layout and clarity of parts. Minor modifications were done based on the jury's recommendations.

## Reliability of the study tools

Reliability of the study tools was tested using Cronbach's alpha coefficient determine the extent to which the questionnaire items were related to each other. Test of reliability for the nurse managers' knowledge questionnaire yield Cronbach's alpha showed (0.79) which indicated an acceptable internal consistency. Also, test reliability for the perceived challenges and barriers by nurse managers about green human resources management questionnaire showed (0.96) which indicated excellent internal consistency.



## V. Ethical Considerations

Prior study conduction, an approval obtained from the Scientific Research Ethics Committee at faculty of nursing–Helwan University. In addition, an approval was obtained from the director of Elaraby Hospital both medical and nursing for data collection. Participation in the study was voluntary and subjects were given complete full information about the study and their role before signing the informed consent. They were assured that anonymity and confidentiality of their information would be guaranteed. The ethical considerations included an explanation about the purpose and nature of the study, stating the possibility to withdraw at any time. Ethics, values, culture and beliefs was respected.

## VI. Pilot study

The pilot study was conducted on 10% of the study subjects (5 nurse managers). The aim of the pilot study was to confirm clarity, applicability of the study tools and to estimate the time required for fulfilling the questionnaire sheets. The time for the first tool was ranged between (5-10 min) and the second tool was (10-15 min). Based on the pilot study, no modifications were done and the final version was prepared for distributing to the nurse managers. Those participants were included in the study sample.

## VII. Field work:

The actual field work started at the middle of July 2023 to the end of September 2023. After obtaining all official permissions, the researcher met the director of Elaraby hospital to explain the aim of the study to gain the approval of data collection. The researcher collected data by herself through meeting nurse managers and explaining the purpose of the study to them in the study setting. The questionnaire sheets were completed by nurse managers. The researcher went to Elaraby hospital one day per week at the day shift and was present during fulfilling the questionnaires to answer any question related to the study. The researcher checked the completeness of each filled sheet after the nurse managers completed it to ensure the absence of any missing data.

## VIII. Statistical Item

Data collected and coded to facilitate data manipulation and double entered into Microsoft Access and data analysis performed using the Statistical Package of Social Science (SPSS) software version 25. Numerical data were presented as mean, standard deviation (SD), median and range values. Qualitative data were presented as frequencies (N) and percentages (%). Pearson's correlation coefficient was used to determine significant correlations between different quantitative variables. One-way ANOVA test used to compare quantitative measures between more than two independent groups of quantitative data. Cronbach's alpha coefficient was used to determine the reliability of the tool.

**IX. Results**

**Table (1):** Frequency and percentage distribution of nurse managers' personal data (N=50).

items	No	%
<b>Age /Years</b>		
< 30	14	28%
30-35	29	58%
> 35	7	14%
<b>Mean ±SD</b>	<b>31.6±3.2</b>	
<b>Years of experience</b>		
< 10	25	50%
10-15	22	44%
> 15	3	6%
<b>Mean ±SD</b>	<b>9.9±3.5</b>	
<b>Gender</b>		
Male	33	66%
Female	17	34%
<b>Level of education in nursing</b>		
Technical Secondary School in Nursing	1	2%
Technical nursing Institution	13	26%
Bachelor	27	54%
Post graduate	9	18%
<b>Working department</b>		
Inpatient	14	28%
Outpatient	3	6%
Other	23	46%
Critical care units	10	20%

**Table (1):** Shows that more than half (58%) of the study subject age was ranged between (30-35) with total Mean  $\pm$ SD (31.6 $\pm$ 3.2). As regard years of experience half (50%) of them were less than 10 years. Also about two thirds (66%) of them were males and more than half (54%) of them were bachelor degree in nursing. In addition only (6%) of them were working at outpatient department, more than a quarter (28%) were at inpatient department and less than half (46%) were working in other departments.



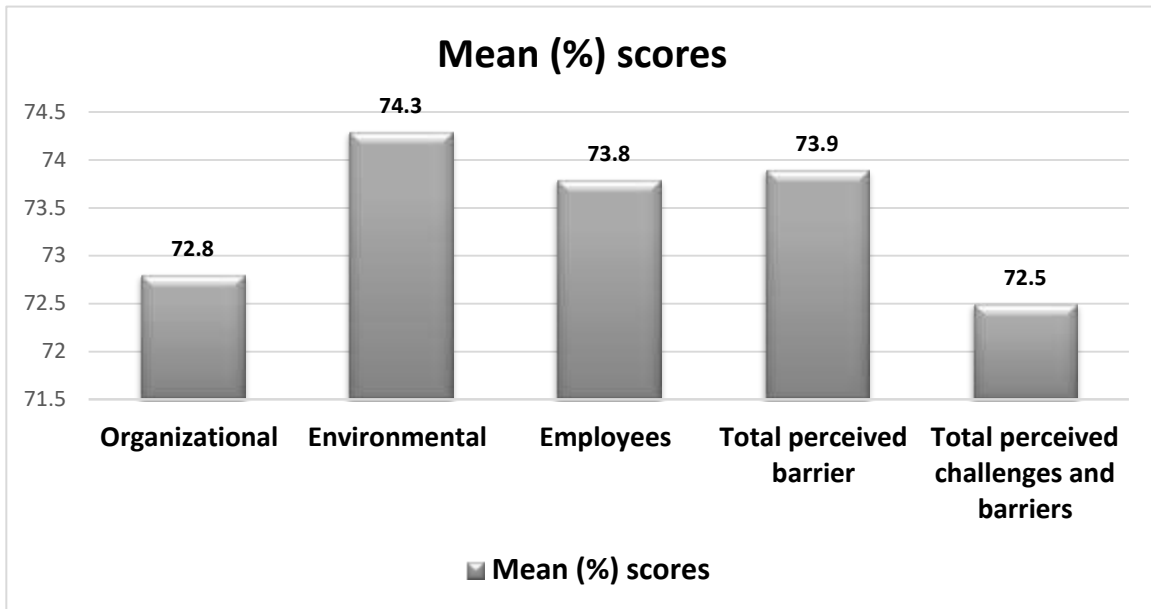
**Figure (1):** Percentage distribution of nurse managers' level of knowledge about green human resources management (N=50).

Fig (1): Show that the majority (70%) of nurse managers had unsatisfactory level of knowledge about green human resource management. While, only (30%) had a satisfactory level of knowledge.

**Table (2):** Mean and SD distribution of Perceived Challenges scores by nurse managers about green human resource management (N=50).

Perceived Challenges items	Question No.	Maximum score	Mean	SD	Mean (%)
Organizational	10	30	20.1	5.45	67.0
Environmental	10	30	22.5	4.9	75.0
Employees	6	18	12.6	3.4	70.0
<b>Total perceived challenges</b>	<b>26</b>	<b>78</b>	<b>55.3</b>	<b>12.5</b>	<b>70.9</b>

**Table (2):** represent that the mean percentage of total perceived challenges by nurse managers about green human resources management was (70.9%). Perceived environmental challenges was the highest one with mean% (75%) and organizational challenges were (67%). In addition, the total mean  $\pm$ SD was (55.3  $\pm$ 12.5).



**Figure (2):** Mean percentage distribution of perceived barriers by nurse managers about green human resources management (N=50).

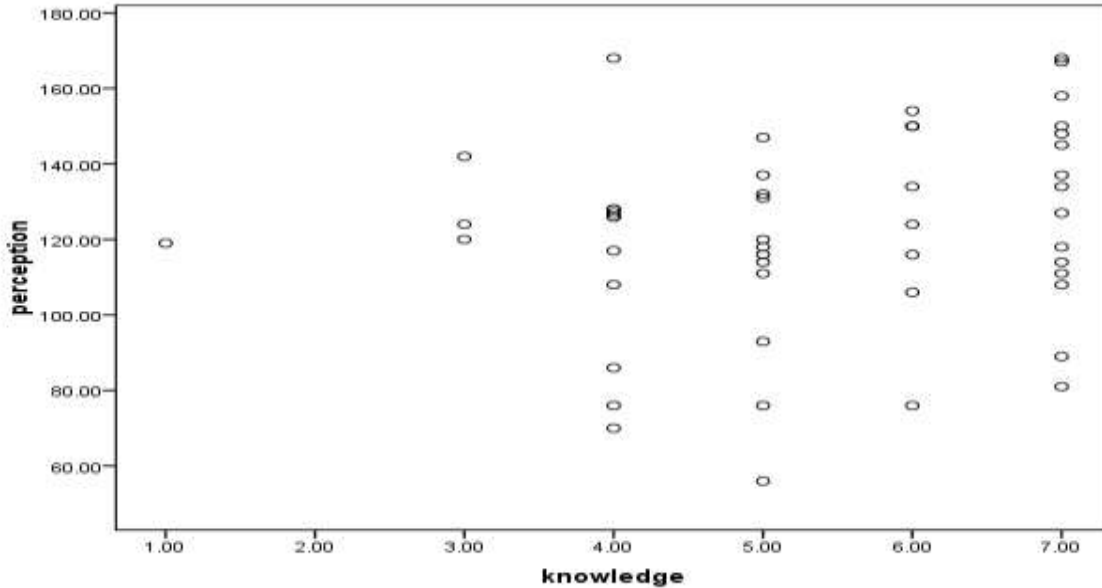
Fig (2): illustrate that the mean percentage of perceived barriers by nurse managers about green human resources management was (73.9%). Environmental barriers were the highest mean % (74.3) while, the organizational were the least (72.8%). On the other hand the mean percentage of the total perceived challenges and barriers was (72.5%). Additionally the total mean  $\pm$  SD of perceived barriers was (66.5  $\pm$ 15.4). While the total mean score and SD of the total perceived challenges and barriers was (121.8  $\pm$ 26.3).

**Table (3):** Frequency distribution of perceived challenges and barriers by nurse managers about green human resource management (N=50).

Perceived level (N= 50)	Frequency	
	No.	%
Positive $\geq$ 70%	31	62%
Negative < 70%	19	38%

Table (3): State that the highest percentage (62%) of nurse managers had positive perception about green human resource management, while only (38%) of them perceived it negatively.





**Figure (3):** Correlation between total knowledge scores and total perception scores among study subjects (N=50).

Fig (3): indicate that there was no statistically significant correlation between total perception and total knowledge about green human resources management among nurse managers (P= 0.19), (r= 0.18).

## X. Discussion

Regarding the personal data, the current study results revealed that, the majority of nurse managers' age was ranged between (30-35). The present study findings were in the same line with the study by *Makarim & Muafi, (2021)* who conducted the study in Indonesia, entitled "The Effect of Green Human Resource Management (GHRM) Practices on Turnover Intention: Mediating Role of Work Environment" and who showed that, the majority of the study subjects had aged between (30-35) years.

In contrary, the study results were stated by *Abdelrahman et al., (2023)* who conducted the study in Egypt, entitled "The Role of Green Human Resource Management Practices in Achieving Sustainable Development in the Hospital from Nurses' Perspective" and who revealed that, the majority of the study subjects' age was less than 30. From the researcher's point of view, these results could be related to that the inclusion criteria of the current study subjects included all available nurse managers.

The study results were illustrated that, about two thirds of the study subjects were males. The current study results were in agreement with the study by *Aldulaimi et al., (2022)* who conducted the study in Kingdom of Bahrain, entitled "Implementing Green Human Resources Management to Promote Sustainability Development: Application from Telecommunication Companies in Kingdom of Bahrain" and who declared that, about two thirds of respondents were males.

On the other hand, the current study results were in opposite line with the study by *Suprpto et al., (2023)* who conducted the study in Indonesia, entitled "Human Resource Development and Job Satisfaction among nurses" and who stated that, near to three quarters of respondents were females. From the researcher's point of view, these



findings could be due to the hospital's location, which is far from residential areas and thus there is a difficulty for females to work there.

Regarding the level of education in nursing, the current study findings found that, more than half of the study subjects were bachelor degree. Also the majority of them were less than 10 years as regard years of experience. The previous study results were in the same line with the study by *Abd El-Monem et al., (2022)* who conducted the study in Egypt, entitled “ The Relation between Green Human Resource Management Strategies and Organizational Innovativeness among Head Nurses”, and who noted that, more than half of the study subjects had bachelor degree in nursing.

Furthermore, the present study results were in harmony with the study by *El-Gazar & Zoromba, (2021)* who conducted the study in Egypt, entitled “Nursing Human Resource Practices and Hospitals' Performance Excellence: The Mediating Role of Nurses' Performance” and who stated that, the majority of the study subjects had bachelor degree and about two thirds of them had less than ten years of experience in nursing career.

In addition, the current study results were in the same line with the study by *Saleh et al., (2023)* who conducted the study in Egypt, entitled “Effect of Green Management Training Program on Nursing Managers' Perception of Occupational Safety and Green Management Practices ” and who reported that, more than half of the study subjects had bachelor degree. From the researcher's point of view, these results might be due to the study subjects were nurse managers who is better to be bachelor degree at least and having experience in nursing.

As regarding working department, more than one quarter of the study subjects were working at inpatient department and one fifth of them were in critical care units. While less than half of the study subjects were working in other departments (OR, radiology, cardiac catheterization and nursing office). On the other hand, the current study results were disagreed with the study by *Abd El-Monem et al., (2022)*, who noted that, more than half of the study subjects were working in OR, dialysis, and surgical ICU. While less than half were working at inpatient medical departments.

Green human resources management is the integration of environmental management with human resources management (*Faisal, 2023*). The current study results were reported that, the majority of the study subjects had unsatisfactory level of total knowledge about green human resources management. The present study results were in the same line with the study by *El-Gazar & Zoromba, (2021)*, who illustrated that, less than three quarter of nurses had low level of knowledge about Green human resources practices. Moreover, the current study findings were in agreement with the study by *Abdelrahman et al., (2023)*, who found that, about two thirds of the nurses had low level of knowledge about green human resources management.

On the other hand, the the current study results were disagreed with the study by *Kamrunnahar et al., (2023)*, who conducted the study in Bangladesh, entitled “The employee Awareness of Green Human Resource Management Practices and Environmental Cooperation in Bangladesh” and who found that, the majority of the study subjects had a satisfactory level about green human resources management practices.

Also, the present study findings were in opposite with the study by *Saaeb & Al-Saidi, (2021)* who conducted the study in Iraq, entitled “The Practical Reality of Green Human Resources Management Strategies (Descriptive Analytical Research of The Opinions of A Sample of Faculty in The Al-Furat Al-A wsat universities Area” who stated that, more than half of participants had a good understanding of green human resource management practices and the sustainability of firms. From the researcher's point of view these results might be related to the new concept of green human resources management in healthcare field in Egypt.

According to the current study results, less than two thirds of the study subjects had positive perception about green human resource management. Also there was no statistically significant correlation between nurse



managers' total perception and their personal data. The present findings were in agreement with *Abd El-Monem et al., (2022)*, who found that, the majority of the studied head nurses had high perception level toward green human resource management. Also, there was non statistical significant difference between total perception levels and personal data.

In addition, the study results were supported with the study by *Tanveer et al., (2023)* who conducted the study in Malaysia, entitled "Green HRM and Hospitality industry: Challenges and Barriers in Adopting Environmentally Friendly Practices" who revealed that more than half of the study subjects had a positive perception about challenges and barriers of green human resources management.

On the other hand, the present findings were in disagreement with the study by *Fawehinmi et al., (2020)* who conducted the study in Malaysia, entitled "Exploring the Interplay of Green Human Resource Management, Employee Green Behavior, and Personal Moral Norms", who found that the majority of the study subjects had low perception about green human resources management. The current study findings indicated that, there was no statistically significant correlation between total perception and total knowledge about green human resources management among nurse managers. These results were in disagreement with the study by *Ali et al., (2023)*, who illustrated that, there was a positive correlation between total green human resources management practices.

In addition, the present study results were in opposite with the study by *Javed et al., (2024)*, who conducted the study in Pakistan, entitled "Green Human Resource Management Practices and Organizational Sustainability Performance in Pakistan's healthcare sector" who showed that there was a positive significance correlation between knowledge and green human resources management practices in Pakistan's healthcare sector. From the researcher's point of view, these results could be because nurse managers have a vision about the perceived challenges and barriers that they may face when implementing green human resources management, but they do not have enough knowledge about green human resources management because it is a new concept in the healthcare field.

At the end, the researcher discussed the results that achieve the objectives of the current study through assess nurse managers' level of knowledge about green human resources management and identify nurse managers' perceived challenges and barriers about green human resources management.

## XI. Conclusion

Based on the study findings, it was concluded that: the majority of nurse managers had unsatisfactory level of knowledge about green human resources management. Also, less than two thirds of them had a positive perception about challenges and barriers of green human resource management. Finally, there was no statistically significant correlation between total perception and total knowledge about green human resources management among nurse managers with  $p\text{-value} = 0.19$ ,  $r = 0.18$ .

## XII. Recommendations

Based on the study findings, the following recommendations are suggested:

- Implement green human resources management policies and practices within the healthcare organization's human resources management framework.
- Integrate environmental sustainability goals into the organization's vision, mission and values.
- Incorporate green practices into the job description, performance evaluation process, recruitment and selection processes.



- Provide training programs and awareness sessions about environmental sustainability in healthcare settings for faculty staff members.
- Integrate environmental sustainability topics into nursing education curriculum to increase nursing students awareness about green management and environmental sustainability.
- Encourage nurses to follow eco-friendly behavior in their daily practices as reducing waste, conserving energy, and promoting recycling.
- Replicate the same study on a large group of nurse managers in private hospitals and compare these hospitals with governmental hospitals.

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