Educational Program for Nurses' Performance about Green Behavior at Maternal and Child Health Centers

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Abstract:

Background: Nursing green behavior refers to any nurse's behavior and minimizes harm to the work environment. **Aim of the study:** This study aimed to evaluate the effect of educational program on nurses' performance about green behavior. **Research design:** A quasi-experimental research design. **Settings:** This study was conducted at Damelo, Marsafa, Child I, Child II and Benha Maternal and Child Health Center. **Subjects:** A convenience sample of all nurses working at the previously mentioned settings (n= 120). **Tools of data collection: Tool I):** A structured interviewing questionnaire, **Tool II):** Green behavior attitude scale and **Tool III):** An observational checklist. **Results**: 65.0% of the studied nurses aged between 40 < 50 years and 92.5% of them were females. More than one tenth of studied nurses had good total knowledge level about green behavior at pre-educational program then this percentage increased to majority and more than three quarters at post educational program and at follow up phase. Also, more than one fifth of them had a positive total attitude level about green behavior at pre-educational program then this percentage increased to more than three quarters and less than three quarters at post educational program and at follow up phase. Additionally, more than one third of them had satisfactory total practices level toward green behavior at pre-educational program then percentage increased to majority and more than three quarters at post educational program and at follow up phase. **Conclusion:** There was a statistically significant positive correlation between studied nurse's total knowledge, total attitude and total practices during phases of the program. **Recommendations:** Periodic health educational programs for nurses should be made to improve nurses' performance regarding green behavior.

Keywords: Educational program, Green behavior, Maternal and Child Health Centers, Nurses

Introduction:

Maternal and child health care is defined as comprehensive care to improve health of the mother and child. Maternal and child health services (MCH) are promotive, preventive, curative, and rehabilitative health care directed to the mother and children in the form of service programs, also deliver health care to a special population vulnerable to disease, disability, and death. Maternal and Child Health Centers (MCHC) play a crucial role in promoting the well-being of mothers, children, and families. MCHC focuses on strengthening public health systems to meet the needs of mothers, infants, and children. MCHC provide guidelines for women's and children's checkups, newborn screenings, and train the public health workforce (**Longmei & Koteswaramma, 2023).**

Climate Change (CC) refers to long-term shifts in temperatures and weather patterns. Such shifts can be natural, due to changes in the sun's activity or large volcanic eruptions. But since the 1800s, human activities have been the main driver of CC, primarily due to the

burning of fossil fuels like coal, oil and gas. Burning fossil fuels generates Green House Gases (GHG) emissions that act like a blanket wrapped around the earth, trapping the sun's heat and raising temperatures. Between 2030 and 2050, CC is expected to cause approximately 250,000 deaths annually and cost billions of global income loss per year (**Lee et al., 2024; Ongoma et al., 2024**).

Health sector produce many types of solid, chemical, and hazardous waste materials. Green behavior has referred to all beneficial workplace activities aimed to assist the environment, also is referred to as any action that benefits the environment or lessens environmental damage. Green behavior not only helps the environment to stay clean, pure and reduce climate change, but it also gives a wonderful feeling of satisfaction, comfort, and happiness Nursing green behavior refers to any behavior performed by nurses that is beneficial to the work environment, minimizes harm to the work environment (**Beggs et al., 2024**).

Community Health Nurse (CHN) can contribute to the tasks for promoting sustainable health for all. These actions improve nurses' knowledge, attitudes, and behavior in terms of sustainability and promote sustainable practices in health care settings. CHN engages in environmentally green behavior and instruct MCH nurse to led initiatives for sustainability as reduce, reuse, recycle can be applied in healthcare settings. Reduce**;** limit the use of disposable products or for those with minimal packaging. Reuse**;** whenever safe and sanitary for reusable items like cloth gowns and durable equipment. Recycle**;** ensure proper segregation of waste and promote recycling initiatives within facility. Energy conservation**:** (such as reducing electrical energy consumption by turning off lights and unused devices) (**Rojas-Perez et al., 2024).**

Significance of the study:

As part of Egypt's Vision 2030, the Government is committed to turning environmental challenges into opportunities. It has taken steps to move towards more sustainable waste management and address air pollution, which remains a health concern. Egypt has significant potential to accelerate its clean energy transition. While environmental information and data have improved overall, public participation in environmental decision making needs to be further enhanced **(Organization for Economic Co-operation and Development (OECD), 2024).**

Hospitals are designed to provide a healthy and comfortable environment for patients and staff while preserving the environment and minimizing its negative impacts as, Green Center in 6th of October, National Cancer Institute Hospital 500 500, Magdi Yacoub Hospital in Aswan, Shafa Orman is the first green hospital and Sharm El Sheikh International is the first hospital to implement the green transformation. The health care facility accredited remarkably in reducing its carbon footprint by 695 tons, reducing electricity consumption by 20.3% annually, and saving nearly 19% of water consumption. This had a positive impact on reducing annual expenditure costs for the facility, achieving financial savings exceeding 6 million Egyptian pounds (**Mekawy, 2023; State Information Service, 2024**).

Aim of the study:

The aim of this study was to evaluate the effect of educational program on nurses' performance about green behavior at maternal and child health centers.

Research hypothesis:

Implementation of educational program will improve nurses' performance regarding green behavior.

Subject and Method:

Research design: A quasi-experimental research design was used in this study.

Settings:

The study was carried-out at Qualyobia Governorate which included 11 Health Administrations, 10.0% of these Health Administrations were selected randomly, which included one Health Administrations called; Benha Health Administration which included 5 Maternal and Child Health Centers called: Benha Maternal and Child Health Centers, Damlo, Marsefa, Child Center (1), Child Center (2), all Maternal and Child Health Centers from Benha Health Administration were taken in this study.

Study subjects:

A convenience sample of all nurses working at the previously mentioned settings were included in this study which included 120 nurses according to following criteria accept to participate in the study and worked for six months at least.

Tools of data collection:

Three tools were used for data collection.

Tool I: A structured interviewing questionnaire. It was developed by researchers based on reviewing related literature; it was written in simple Arabic language. It was adopted from **Netravathia & Chauhan, (2014); Wei et al., (2014); Berniak-Woźny & Rataj, (2023)**. This questionnaire consisted of two parts.

First part: It was concerned with socio-demographic characteristics of studied nurses which included 8 items.

Second part: To assess nurses' knowledge about green behavior. It included 13 closed ended questions (multiple choice types).

Scoring system: Knowledge score for each answer was given as follow (2) score for correct and complete answer and (1) score for correct and incomplete answer while (0) for don't know. These scores were summed up and the total divided by the total number of items giving a mean score. The scores were converted into percent score. The total scoring system in knowledge part was classified as the following:

Total scores of knowledge= 26 points.

- Good knowledge if total score was ≥75 % (≥ 19 points).
- Average knowledge if total score was 50% to less than 75% (13 < 19 points).
- Poor knowledge if total score was less than 50% (< 13 points).

Tool II: **Green behavior attitude scale**: It was adopted from **Wei et al., (2014)** to assess nurses' attitude regarding green behavior. It included 7 items.

Scoring system: Attitude scale score was calculated as (2) scores for agree and (1) scores for uncertain while (0) for disagree. These scores were summed up and the total divided by the total number of items giving a mean score for the part. The scores were converted into percent score. The total scoring system of attitude part was classified as the following:

Total attitude scores = 14 points.

Positive attitude when the score was ≥ 80 % (≥ 11 points).

Negative attitude when the score was < 80 % (<11points).

Tool III: **An observational checklist**. It consisted of two parts:

Part I: To assess nurses' practices about green behavior and climate change. It was adapted from **Chartier et al., (2014); Virginie et al., (2021)** which included three sections: Waste management which consisted of 11 items, conserving which consisted of 23 items and influencing consisted of 9 items.

Scoring system: The scoring system for nurses' practices was calculated as following: (1) score for done while (0) score for not done. The score of the items was summed-up and the total divided by the number of the

items, giving a mean score for the part. These scores were converted into a present score. The total scoring system in practices part was classified as the following:

Total practices score = 43 points.

Satisfactory practices when the total score was ≥ 80% (≥ 34points).

Unsatisfactory practices when the total score was < 80% (<34points).

Part II: It was concerned with observation of the green design of MCH Centers. It was adopted from **Chartier et al., (2014); Samragi et al., (2018)**. It included 25 items.

Environmental scoring system: It was designed for the assessment of green design, (1) score was given for present and (0) score was given for not present the score of each item summed-up and then converted into a percent score. The total scoring system in environmental part was classified as the following:

Total Environment score = 25 points.

- **Green environment** if score was ≥ 60% (≥ 15 points).
- **Not green environment** if the score was < 60% (< 15 points).

Content validity:

The tools were reviewed by five experts from the Community Health Nursing Specialties Department, Benha University and gave their opinion for clarity, relevance, comprehensiveness, appropriateness, legibility and applicability.

Reliability of the tools:

The reliability of the tools was done by Cronbach's Alpha coefficient test which revealed that each of the three tools consisted of relatively homogeneous items as indicated by the moderate to high reliability of each tool. The internal consistency of knowledge was 0.67. The internal consistency of attitude was 0.87. The internal consistency of practice was 0.85.

Ethical considerations:

Approvals to conduct the study were obtained from the Scientific Research Ethics Committee, Faculty of Nursing, Benha University; code: REC-CHN-P: 79. The study technique was illustrated to gain their cooperation which is needed to allow the researchers to meet studied subjects at chosen settings. The agreement for participation were taken formally before conducting the interview and given a brief orientation to the purpose of the study. Participants were also reassured that all information gathered would be confidential and used only for the purpose of the study. No names were required on the forms to ensure anonymity and confidentiality. The study maneuvers will not cause any harmful effects to the participants. The participants had the right to withdraw from the study at any at any time without giving any reasons.

Pilot Study:

A pilot study was carried out on 10.0% (12 nurses) of the total sample (120) to test the clarity, practicability and applicability of tools. According to the results obtained from data analysis, items didn't need for correction or modification so subjects of pilot study were included in the total sample.

Fieldwork:

(I) Preparatory and assessment phase:

In this phase of the program, the researchers assessed knowledge, attitude and practices of the studied nurses regarding green behavior through collection and analysis of baseline data from the filled tools. Based on pre–test data obtained from questionnaire and observed checklists, as well as literature review, the educational program was developed by the researchers. It was implemented immediately after pre–test.

(II) Planning phase: The researchers identified the important needs for target

group, set priorities of needs, goals and objectives, teaching methods, teaching media and methods of evaluation were developed.

- **General objective of the program:-**

  At the end of this educational program, the studied nurses would be able to improve performance about green behavior

- **Specific objectives:** At the end of this educational program studied nurses would be able to:

- Define green behavior, recognize characteristics and advantages of green behavior.
- Identify importance, objectives and types of green behavior.
- Determine sustainability in nursing.
- Clarify green team role and green choice.
- Understand green designing of Maternal and Child Health Centers and main goal of these Centers.
- Carry out steps for medical waste management.
- Execute ways for reducing microbial infection control on hard surfaces in health care.
- Apply ways to reduce use, recycling and ways how to influence other.

Teaching methods: All nurses received the same education instructions content using the same teaching methods, which were (lecture, group discussion and demonstration/ redemonstration). **Teaching media:** Suitable teaching aids were specially selected for the health educational program as follow: Hand out, Data show & videos and real objects.

Methods of evaluation: Feedback (verbal and non-verbal), re-demonstration and observation.

(III) Implementation of the program:

Data were collected from the beginning of January 2024 to the end of May 2024. The researchers visited Benha MCHC from the beginning of January to the end of February, two days/week (Saturday and Thursday) from 9 A.M.- 1 P.M. During a session, a group of 3 nurses attended. The researchers visited Child center (1, 2)) from the beginning to the end of March, the first two weeks the researchers visited center (1), and the next two weeks the researchers visited center (2), two days/week (Saturday and Thursday) from 9 A.M.- 1 P.M. During a session, a group of 4 nurses attended.

The researchers visited Damlo MCHC from the beginning to the end of April, two days/week (Saturday and Thursday) from 9 A.M- 1 P.M. During a session, a group of 2-3 nurses attended. The researchers visited Marsefa MCHC from the beginning to the end of May, two days/week (Saturday and Thursday) from 9 A.M.- 1 P.M. During a session a group of 2-3 nurses attended.

Approval was obtained orally after the researchers introduced themselves to the nurses after explaining the purpose of the study. The researchers introduced the program at 5 sessions: 2 theoretical and 3 practical. The duration of the session various according to the content and nurses' response ranged from 30-45 minutes.

- **First session:** At the beginning of the first session, the researchers welcome and introduce herself to the nurses, an orientation to the educational program and its process were presented, with clearance general and specific objectives of the program and expected outcome, information about green behavior includes definition of green behavior, green behavior characteristics and advantages, importance of green behavior, factors affect green behavior and objectives of green behavior.
- **Second session**: It covered types of green behavior, sustainability in nursing, green team role and green choice, green designing of Maternal and Child Health Centers and main goal of these centers.
- **Third session**: Carrying out steps for medical waste management.

- **Fourth session:** Executing ways for reducing microbial infection on hard surfaces in health care and apply ways to reduce use.
- **Fifth sessions**: Carrying out ways for recycling and creating ways how to influence other.

(IV): Evaluation of the health educational program: It was done by using the post-test which was the same format of pre-test questionnaire to compare the change of nurses' knowledge, attitude and practices immediately after implementation of the health educational program, and performing follow up questionnaire after three months.

Statistical analysis:

The collected data was analyzed, tabulated and presented in figures using the number and percentage distribution, mean and stander deviation using Statistical Analysis Package for Social Science (SPSS) version 20. Data were presented using proper statistical tests and if there was positive correlation or not. The following statistical tests that were used: Number and percentage: Mean, Stander Deviation (SD), Chi-squareX^2, and correlation coefficient (r) were used for qualitative data. Also, P-value was used to determine significance of results as follows:

- P > 0.05 Not significant.
- P ≤ 0.05* Statistically significant.
- P ≤ 0.001** Highly statistically significant.

Results:

Table (1): Displays that, 65.0 % of the studied nurses aged between 40 to less than 50 years, with mean ±SD 42.15±5.14, 92.5% of them were females, and 86.6% of them were married. As for their income, 64.2% of them didn't have enough income, and 56.7% of them were living in rural areas. Concerning years of experience; 86.6% of studied nurses had more than 10 years of experience with mean ±SD 16.11±4.71.

Figure (1): Show that, 13.3% of studied nurses had good total knowledge levels about green behavior at pre-educational program implementation then this percentage increased to 82.5% and 76.7% respectively at post educational program and at follow up phase respectively with highly statistically significant difference (P ≤ 0.001)

Figure (2): Show that; 20.8% of studied nurses had a positive total attitude levels about green behavior at pre-educational program implementation, then this percentage increased to 75.8% and 71.7% at post educational program implementation and at follow up phase respectively with highly statistically significant difference of the studied nurses' total attitude levels regarding green behavior pre-educational program implementation and at follow up phase (P ≤ 0.001).

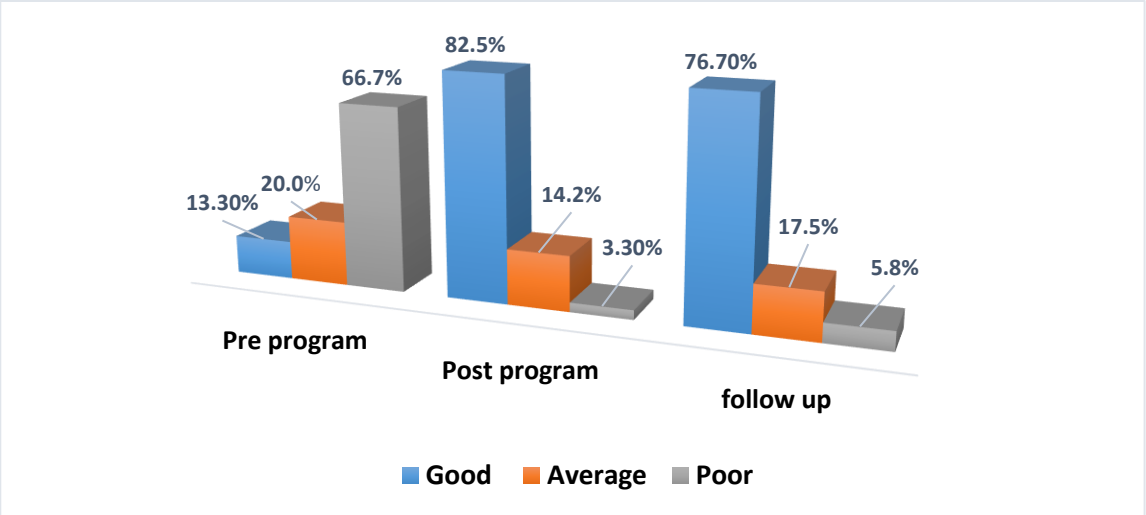
Figure (3): Reveals that; 38.3% of studied nurses had satisfactory total practices levels toward green behavior and climate change at pre-educational program implementation, while this percentage increased to 82.5% and 78.3% at post educational program implementation and at follow up phase respectively with highly statistically significant difference of the studied nurses' total practices levels regarding green behavior and climate change pre-educational program implementation and at follow up phase (p ≤ 0.001).

Figure (4): Show that, 100.0% of studied Maternal and Child Health Centers did not have green environment.

Table (2): Reveals that, there was statistically significant positive correlation between studied nurse's total knowledge, total attitude and total practices at pre and post educational program implementation and at follow up phase

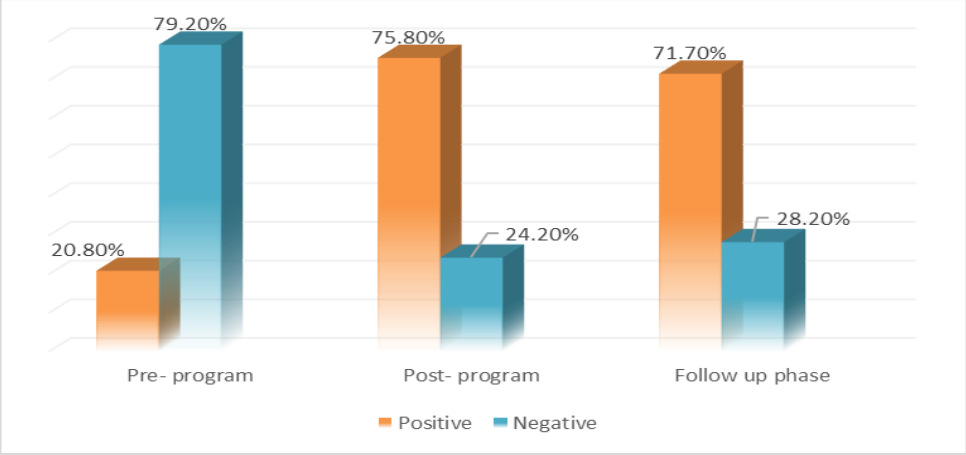
Table (1): Distribution of studied nurses regarding their socio-demographic characteristics (n=120).

Socio-demographic characteristics	No.	%
Age/Years		
20< 30	9	7.5
30< 40	16	13.3
40 < 50	78	65.0
≥ 50	17	14.2
Mean ±SD 42.15±5.14		
Gender		
Male	9	7.5
Female	111	92.5
Marital statues		
Married	104	86.6
Divorced	8	6.7
Widow	8	6.7
Residence		
Rural	68	56.7
Urban	52	43.3
Monthly income.		
Enough	43	35.8
Not enough	77	64.2
Experience		
1< 5	8	6.7
5< 10	8	6.7
≥ 10	104	86.6
Mean ±SD 16.11±4.71		



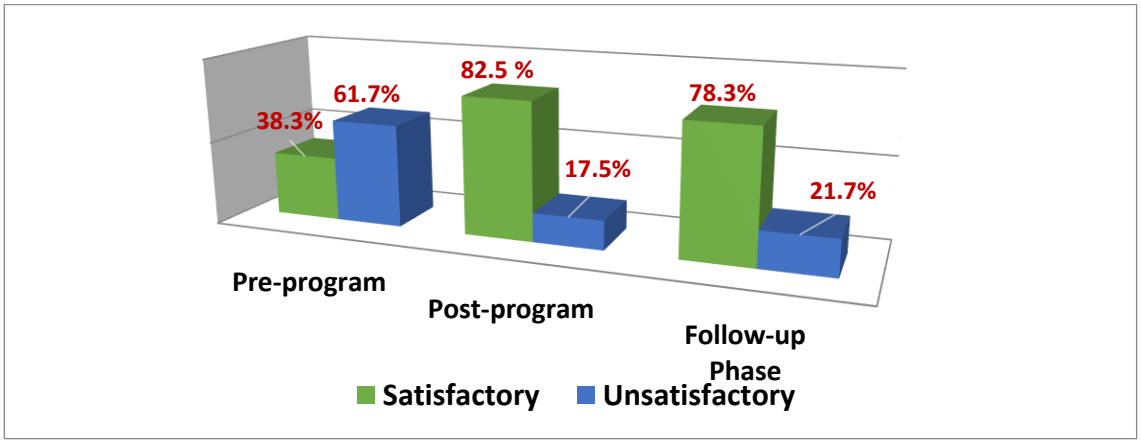
$X^2$1 between pre and post program, $X^2$2 between post and follow-up program, $X^2$3 between pre and follow-up
P value≤ 0.001 $X^2$1: 129.86 $X^2$3: 114.93 No significant at p >0.05 $X^2$2: 1.496

Figure (1): Percentage distribution of studied nurses' total knowledge level about green behavior through the program phases, (n=120).



$X^2$1between pre and post program, $X^2$2, between post and follow-up program, $X^2$3 between pre and follow-up
P value≤ 0.001 X21: 72.68 X23: 62.36 No significant at p >0.05 X22: .538

Figure (2): Percentage distribution of studied nurses total attitude level about green behavior through the program phases (n=120).



$X^2$1between pre and post program, $X^2$2 between post and follow-up program, $X^2$3 between pre and follow-up
P value≤ 0.001 $X^2$1: 57.85 $X^2$3: 47.56 No significant at p >0.05 $X^2$2:.345

Figure (3): Percentage distribution of studied nurses regarding their total practices' levels regarding green behavior through the program phases (n=120).

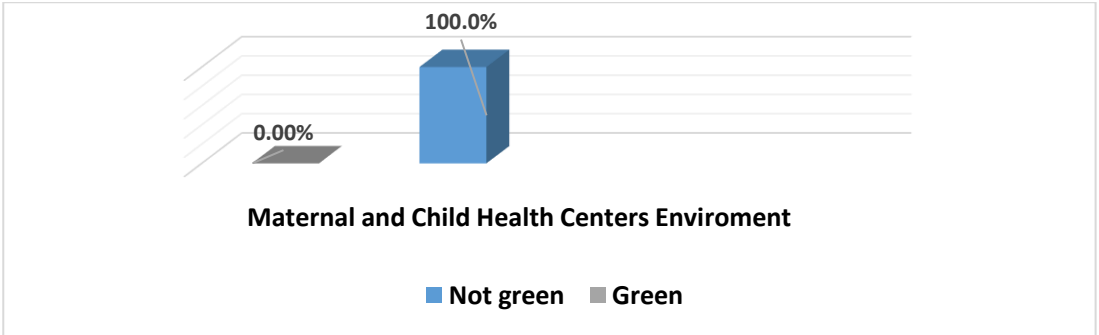


Figure (4): Percentage distribution of studied maternal and child health centers regarding green environment (n =120).

Table (2): Correlation between studied nurses' total knowledge, total practices and total attitude through the program phases (n=120)

Items	Pre educational program						Post educational program						Follow up after three months					
	Total Knowledge		Total practices		Total Attitude		Total Knowledge		Total practices		Total Attitude		Total Knowledge		Total practices		Total Attitude	
	r.	p-value	r.	p-value	r.	p- value	r.	p-value	r.	p-value	r.	p- value	r.	p- value	r.	p- value	r.	p- value
Knowledge			.181	.048*	.469	.000**			.623	.045*	.531	.000**			.600	.000**	.390	.000**
Practices	.181	.048*			.243	.007*	.623	.045*			.667	.040*	.600	.000**			.273	.010*
Attitude	.469	.000**	.243	.007*			.531	.000**	.667	.04*			.390	.000**	.273	.010*		

Discussion:

Green behavior refers to any behavior that is beneficial to the environment, minimizes harm to the environment, recycling, adapt processes, services, products to climate change such as purchasing sustainable products. Global climate change is disruption of the composition of the climate due to the increase in greenhouse gases in the atmosphere resulting from human activities. Community health nurses have a unique opportunity to advocate for sustainable practices, green behavior and reduce the environmental impact of the health care system. In order to understand and manage the effects of global climate change on health and to develop eco-friendly sustainable health systems, Community health nurses need to become change agents by gaining knowledge, attitude and skills (**İlaslan, & Orak, 2024).**

According to socio-demographic characteristic of studied nurses the present study displayed that, nearly two thirds of the studied nurses aged between 40 to less than 50 years, with Mean ±SD 42.15±5.14, most of them were females, and majority of them were married. These findings were similar to **Rojas-Perez et al. (2024),** who studied "Nurses' environmental practices in Northern Peruvian hospitals, in Peru" (n=106), and found that, the average age of nurses who participated in the study was 41.89 years (SD = ±10.50). Moreover, these findings agreed with **Ibrahim et al. (2022)**, who studied "Nurses' performance regarding infection control precautions in primary health care centers in Egypt" (n=379), and found that 85.8 % of nurses were females. From researchers' point of view, this might be due to many people consider nursing profession as feminine job.

Also, these findings were in agreement in sex and dis agreed in marital status with **Chung et al., (2024)**, who studied "Validation of the sustainability attitudes in nursing survey-2 for nurses: A cross-sectional study, in Seoul, South Korea" (n=379), and found that, the participants' gender, 92.6% were females while, 54.2% of them were singles. While these findings disagreed in age and agreed in sex and marital status with **Elkholy, (2024),** who studied "Prosocial leadership and organizational sustainability: moderating role of nurses' green behavior, in

Egypt" (n=286) and showed that the majority of participating nurses' ages ranged from 30-40 years, and 76.9% of them were female, and 92.3% were married.

Concerning on studied nurses' income and residence, the current study described that, less than two thirds of studied nurses didn't have enough income, and more than half of them were living in rural areas. These findings were in the same line with **Saad et al., (2024)**, who studied "Effect of educational program on nurses' perception regarding green hospital and attitude towards patient safety guidelines, in Egypt" (n=107) and reported that; 62.6% of nurses were living in rural areas and did not have enough monthly income for 57.9% of them. From researchers point of view, this might be due to low socio-economic level and the cost of living.

Concerning on studied nurses' total knowledge levels about green behavior. This result represents that more than one tenth of studied nurses had good total knowledge levels about green behavior at pre-educational program implementation then this percentage increased to majority and more than three quarters respectively at post educational program and at follow up phase respectively with highly statistically significant difference in studied nurses' knowledge about green behavior throughout pre-educational program and at follow-up phase ($P \leq 0.001$). From researchers' point of view, this might be due to increase number of courses about green behavior.

This finding is in harmony with **Topcu & Kiraz. (2025),** who studied **"**Exploring knowledge, attitudes, and behaviors towards sustainable and green healthcare systems: A Scoping Review, in Türkiye" n=43 and found that majority 86.6% of participants achieving satisfactory knowledge levels post-intervention compared to minority 2.68% pre-intervention regarding green behavior.

As regards to studied nurses' total attitude levels about green behavior, the current study clarified that; one fifth of studied nurses had positive total attitude levels about green behavior at pre-educational program implementation then this percentage increased to three quarters and less than three quarters at post educational program implementation and at follow up phase respectively with highly statistically significant difference of studied nurses' total attitude levels about green behavior throughout post program and at follow up phase ($P\leq 0.001$). From researchers' point of view, this might be due to effectiveness of educational program.

These findings agreed with **Kamal et al., (2024),** who studied "The effect of sustainable development educational program on nursing interns' students' knowledge, behavior and attitude, Egypt" n=159 and found that less than half of studied nurses student had positive total attitude levels about sustainable development at pre-educational program implementation then this percentage increased to less than two thirds (66.1% and 65.1%) at post educational program implementation and at follow up phase respectively and there was a highly statistically significant improvement in intern student' total attitude regarding sustainable development after the educational intervention implementation as well as at the follow up phase

Also, these findings were in the same line with **Saad et al. (2024),** who showed that there was improvement in the total positive green behavior attitude among nurses from 6.5% to 90.7% after the educational program, with a statistical rank difference between total pre and post nurses' attitude. From

researchers' point of view this is might be due to educational program had appositive effect on improvement of nurses' attitude level about green behavior after educational program implementation compared with preprogram phase.

Concerning on studied nurses' total practices levels regarding green behavior, the present study revealed that more than one third of studied nurses had satisfactory total practices levels toward green behavior at pre-educational program implementation while this percentage increased to majority and more than three quarters at post educational program implementation and at follow up phase respectively. This finding was in harmony with **Elgarf et al. (2023)** who studied "Educational program for nursing management staff about green management and its effect on patient safety, in Egypt" (n=60), who showed that, most and the majority of nursing staff have competent total practices regarding green behavior immediately post program phase and follow up (after 3 months) respectively compared to (66.70%) preprogram phase.

Concerning Maternal and Child Health Centers regarding green environment the current study showed that all of studied Maternal and Child Health Centers did not have green environment. This finding in disharmony with **Vallée, (2024)**, who studied "Green hospitals face to climate change: Between sobriety and resilience. France" and founded that, the United States Environmental Protection Agency (EPA) describes green buildings as structures created and processes used that are both environmentally responsible and resource-efficient throughout the building's life cycle. This includes considerations from the site location to design, construction, operation, maintenance, renovation, and even deconstruction. This approach not only focuses on traditional aspects like economy, utility, durability, and comfort but also emphasizes sustainable or high-performance building practices

Concerning on correlation between total knowledge, total practices and total attitude among studied nurses, the present study revealed that; there were positive correlation between studied nurse's total knowledge, total attitude and total practices at pre and post educational program implementation and at follow up phase. This finding was in harmony with the study done by **Elgarf et al., (2023),** who demonstrated that, there was positive correlations between total knowledge, total attitude and total practices of nursing staff at pre& immediately post and follow up (after 3 months) program phase. From researchers' point of view, this might be due to good knowledge led to good practices which forming positive attitude.

Also, this finding agreed with study done by **Ghazy, & Fathy, (2023),** who studied "Effect of awareness program regarding climate change on knowledge, attitudes and practices of nurses university students, in Egypt" (n=425) who demonstrated that there was a positive correlation between the post-program total nursing students' knowledge score level and total daily life practices &attitudes ($p \leq 0.001$). From researchers' point of view thigh might be due to importance of correct and good knowledge for good and right practices which affect attitude.

Conclusion:

The educational program succeeded to improve knowledge, attitude and practices of nurses about green behavior. As evidence more than one tenth of studied nurses had good total knowledge level about green behavior at pre-educational program implementation, then this percentage increased to majority and more than three

quarters at post educational program and at follow up phase respectively.

Also, more than one fifth of studied nurses had a positive total attitude level about green behavior at pre-educational program implementation then this percentage increased to more than three quarters and less than three quarters at post educational program implementation and at follow up phase respectively and more than one third of studied nurses had satisfactory total practices level toward green behavior at pre-educational program implementation while this percentage increased to majority and more than three quarters at post educational program implementation and at follow up phase respectively

Recommendations:

- Periodic health educational programs for nurses should be made to improve nurses' knowledge, attitude and practices regarding green behavior.
- Green hospital guidelines should be implemented nationally to be in line with the sustainable development goals.

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برنامج تثقيفي لاداء الممرضات عن السلوك الاخضر بمراكز رعاية الأمومة والطفوله

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السلوك الاحضر للتمريض يشير الي أي سلوك يقوم به الممرض يقلل من الضرر على بيئة العمل. لذلك **هدفت الدراسة** الي تقييم تأثير برنامج تثقيفي على أداء الممرضين فيما يتعلق بالسلوك الاخضر. **تصميم البحث**: تم استخدام تصميم شبه تجريبى. **مكان البحث**: تم تنفيذ هذه الدراسة فى مراكز دملو ومرصفا ورعايه ١ ورعاية ٢و مركز بنها لرعاية الأمومه والطفوله في محافظة القليوبية. **عينة الدراسة:** وقد أجريت هذه الدراسة على عينة متاحه مكونة من ١٢٠ من الممرضيين الذين يعملون فى الأماكن السابق ذكرها. **أدوات جمع البيانات**: الأداة الأولى: استمارة استبيان المقابلة المنظم, الأداة الثانية: مقياس اتجاه السلوك الاحضر والأداة الثالثة: قائمة ملاحظات. **النتائج**: كشفت النتائج عن ٦٥,٠٪ من الممرضين الذين تم دراستهم تتراوح أعمارهم بين ٤٠ و ٥٠ عامًا، و٩٢,٥٪ منهم إناث. وأكثر من عُشر الممرضين المدروسين كان لديهن مستوى جيد من المعرفة الإجمالية حول السلوك الأخضر قبل البرنامج التعليمي، ثم ارتفعت هذه النسبة لتصبح الأغلبية وأكثر من ثلاثة أرباع بعد البرنامج التعليمي، وفي مرحلة المتابعة. و كان لدى أكثر من خُمسهن مستوى إيجابي كلي تجاه السلوك الأخضر قبل البرنامج التعليمي، ثم ارتفعت هذه النسبة لأكثر من ثلاثة أرباع وأقل من ثلاثة أرباع بعد البرنامج التعليمي وفي مرحلة المتابعة. وكذلك, كان لدى أكثر من ثلثهن مستوى مرضٍ من الممارسات الكلية تجاه السلوك الأخضر قبل البرنامج التعليمي، ثم ارتفعت النسبة لتصبح الأغلبية وأكثر من ثلاثة أرباع بعد البرنامج التعليمي وفي مرحلة المتابعة. **الاستنتاج**: كانت هناك علاقة إيجابية ذات دلالة إحصائية بين المعرفة الإجمالية للممرضين المدروسين، واتجاهاتهم الإجمالية، وممارساتهم الإجمالية خلال مراحل البرنامج. **التوصيات:** وأوصت الدراسة تنظيم برامج تعليمية صحية دورية للممرضات بهدف تحسين أدائهن فيما يتعلق بالسلوك الأخضر.