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Effect of ethical leadership on nurses' green behavior at Zagazig University Hospitals

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Abstract: **Background:** Ethical leaders show their values through their positive green behavior, and setting an example is a chance for managers to deliver value to subordinates. Since nurses feel high ethical leadership, they will feel the approval of the leader for green behavior and demand the subordinates to be responsible for the behavior. **This study aimed** to assess the relationship between ethical leadership and nurses' green behaviors. **Design:** A descriptive correlational design. **Setting:** The study was conducted at Zagazig University Hospitals, AL-Sharqia governorate, Egypt. **Sample:** A simple random sample of nurses (n=400) who agreed to participate in the study. **Tools:** Ethical Leadership questionnaire (ELW), and Nurses' Green Behavior Descriptive Norms scale. **Results:** : one third of the nurses perceived that their leaders have high ethical leadership at work. While more than third of nurses (41.7%) exhibited high green behavior levels. Moreover, there were highly statistically significant positive correlations between nurses' perception of ethical leadership and Nurses' green behavior where p value less than 0.05. **Conclusion:** there were highly statistically significant positive correlations between nurses' perception of ethical leadership and their green behavior. **Recommendations:** Conducting training programs and workshops for all managerial levels to clarify the concept of ethical leadership, and the extent to which the hospital and staff benefit from ethical leadership and develop workplace green teams.

Keywords: Ethical Leadership- Nurses- Green Behavior

Introduction

Ethics play an important role in activating the manpower and achieving the organizational goals. The nurse leaders' ethical behavior can promote the care quality by affecting the nurses' performance and bringing up several positive consequences for the organization. Nurse leaders are part of the healthcare system who manages the greatest group of the nurses. Moreover, recent empirical research confirmed that ethical leaders have a vital part in affecting the ethical behavior of nurses through their day- to- day communication with their followers (Islam et al., 2019).

Ethical leaders show their values through their positive green behavior, and setting an example is a chance for managers to deliver value to subordinates (Islam et al., 2020). Ethical leadership is leadership that is directed by respect for ethical beliefs and values and for the dignity and rights of others. It is related to concepts such as trust, honesty, consideration, charisma, and fairness (Susanto, 2019). There are five major principles of ethical

leadership which included **honesty**; any form of dishonesty is not accepted in such a leadership style. Dishonest behavior will only create an environment of mistrust and disrespect. The second principal is **justice**; an ethical leader is a fair and just leader (**Schnell, 2019**).

The third principal is **respect**; an ethical leader is respectful in speech, manner, and approach towards peers and nurses. The fourth principal is **community**; Ethical leaders have strong interpersonal skills, and place the welfare of nurses in high esteem (**Angelos et al., 2021**). The last principal is **integrity**; an ethical leader has a vital moral purpose and is extremely honest in approach (**Tamunomiebi, &Orianzi, 2019**).

A leader with a high level of ethical leadership, individuals are more likely to translate green behavioral intention into actions. Since individuals feel high ethical leadership, will feel the approval of the leader for green behavior and demand the subordinates to be responsible for the behavior. If do not translate green behavior tendency into action, the leadership recognition gain will be reduced. Ethical leadership promotes nurses' green initiatives by sharing leaders' views on the environment with their subordinates, establishing organization value, and encouraging mutual awareness. (**Ahmad et al., 2021**).

Green oriented behavior is a kind of behavior where the environment can be protected from different types of pollution that is air/land/water/noise plus the natural resources can be conserved and used in a sensible and responsible manner (**Liu et al., 2020**). Green behavior can benefit planet by eliminating the negative impact on it through unsustainable consumption, about reducing ecological footprint, about helping future generations grow up in a healthy environment green behavior and sustainable consumption are beneficial to people as well as the environment (**Chaudhary, 2020**).

According to social learning theory, subordinates will regard leaders with power and status as role models to learn from. Individuals judge the ethic of their behaviors by summarizing the rewards/punishments received from their own behaviors or others' behaviors and adjust and regulate their own behaviors accordingly. For nurses, green behavior is an individual behavior consistent with environmentally sustainable development goals, and the positive green behavior of leaders encourages employee green behavior (**Li et al., 2021**).

Aim of the study

- 1) Identify the level of ethical leadership as perceived by nurses.
- 2) Determine the level of nurses' green behavior.
- 3) Assess effect of ethical leadership on nurses' green behavior.

Research Design:

A descriptive correlational design was used in this study.

Setting:

This study was conducted at Zagazig University Hospitals in Zagazig city, AL-Sharqia governorate, Zagazig University Hospitals has a total capacity of 2074 bed

Population:

Nurses who are working at Zagazig University Hospitals, the number of total population is 2770 nurses.

Sample Size:

The sample size was calculated using the simplified formula ($n=N/1+N(e)^2$), as provided by **Yamane (1967)**, plus a dropout rate 10% {375+10%=413}.

Sampling technique:

Simple random sample of nurses who agreed to participate (400). In total 413 questionnaires were distributed in the selected hospital, 400 properly filled questionnaires showing 97 % response rate were obtained. Thus, sample size considered for present research was comprised of 400 nurses.

Tools of data collection:

Data for this study were collected by using three tools namely; Ethical Leadership at Work Questionnaire (ELW), Nurses' Voice Behavior Scale and Nurses' Green Behavior Scale.

Tool I: Ethical Leadership at Work Questionnaire (ELW); This tool consists of two parts

- I. **Part one:** Personal and work-related characteristics of nurses such as age, years of experience, educational qualification, department and gender.

- II. Part two: Ethical Leadership at Work:** this tool aimed to identify the level of ethical leadership as perceived by nurses. It was developed by **Kalshoven et al., (2011)** and consisted of 38-items grouped under 7 dimensions; Fairness (6 items), Integrity (4 items), People orientation (7 items), Role clarification (5 items), Power sharing (6 items), Ethical guidance (7 items) & Concern for sustainability (3 items).

Scoring System:

Staff nurses' are required to respond in a manner that most accurately reflects their perception of the frequency of their leader's behavior. Responses of nurses have measured on 5 points Likert scale ranged from one to five (strongly disagree to strongly agree). Thus, the minimum possible score was 38 and the maximum 190. The scores were converted in to a percent score. Then the ethical leadership perception considered low if the percent score was less than 60%, moderate from 60% - <75% and high if 75% or more (**Badran & Akeel (2022)**).

Tool II: Nurses' Green Behavior Scale; it was developed by **Norton Etal, (2017)** to determine level of green behavior among nurses and consists of two parts: -

First Part: Green behavior Intentions: - to measure green behavioral intentions at the within nurses' level using three items. The responses of the participants were measured on a 5-points Likert scale ranging from strongly disagree (1) to strongly agree (5).

Second Part: Next day nurses green behavior scale: - to measure daily nurses green behavior consists of 11 items. The response of the participants was measured on 5 points Likert scale ranging from never (1) to always (5). The total level of green behavior among nurses considered; **Low** < 50%, **Moderate** 50 < 75 %, **High** ≥ 75 % (**Pimentel,2010**)

Validity of data collection tools:

The tools of data collection were translated into Arabic, and then content and face validity was established by a jury of "five" experts specialized in nursing administration. They were asked to express their comments on the tools for clarity, applicability, comprehensiveness, understanding, any suggestions for any additional or omissions of items and ease for implementation. According to their opinions, all recommended modifications are performing by the researcher. Internal consistency reliability was using Cronbach's alpha coefficients were 0.745 for Ethical Leadership at Work Questionnaire (ELW), 0.865 for Nurses' Green Behavior Descriptive Norms Scale.

Pilot study:

A pilot study was performed on 41 nurse (10% of the sample) to check the clarity and applicability of this study tool and to estimate the time required to complete the tools of data collection for each participant. It was conducted in May 2022. Data obtained from the pilot study was analyzed and no modifications were done, so pilot study sample was included to the main study sample.

Field work:

The researcher introduced herself to nurses then explained the aim of the study to nurses and invited them to participate. Those who gave their verbal consent to participate were handed the tool form. The researcher was present during the data collection period (from June 2023 to October 2023) to explain how to filling the questionnaires, clarify any ambiguity and answer any questions then the researcher checked each filled questionnaire sheet to ensure its completion.

III. Administrative Design:

An official permission was obtained from the Dean of Faculty of Nursing, Zagazig University. This letter included the aim of the study and photocopy from data collection tools in order to get the permission and help for collection of data. An oral consent was obtained from each participant.

Ethical considerations:

The study was approved by Research Ethics committee (REC) of the faculty of nursing, Zagazig University, approval to conduct the study was obtained from the medical and nursing directors of Zagazig University Hospital. The agreement for participation of the study was taken after fully explanation of the aim of the study. Participants were given the opportunity to refuse the participation, and they were notified that they could

withdraw at any time. Also, they were assured that the information would be confidential and used for the research purpose only.

Participants were informed about the purpose of the study and their participation was voluntary. They were instructed to keep in mind first-line nurse managers when filling out the questionnaires.

IV- Statistical Design:

Data entry and statistical analysis were using the Statistical Package for Social Science (SPSS), version 20.0. Data were presented using descriptive statistics in the form of frequencies and percentages for categorical variables, and means and standard deviations for continuous variables. Cronbach Alpha coefficient was calculated to assess the reliability of the tools through their internal consistency. Qualitative variables were compared using chi-square test. Independent t-test and ANOVA were used to detect the relation between the variables. Pearson correlation analysis was used for assessment of the interrelationships between total scale scores.

Results

Table (1) shows that (.492%) of the nurses studied were aged between 25 and less than 35 years, with a mean age of 37.61 ± 3.54 . Most of the nurses (70.0%) were female, and 64% of them held a bachelor's degree in nursing. Furthermore, less than half (38.7%) of the nurses had 5 to 10 years of experience, with a mean experience of 7.85 ± 1.76 years. (25.8%) of the nurses worked in the surgical departments.

Table (2) presents the levels of ethical leadership behaviors as perceived by studied nurses. The results shows that less than half of nurses perceived their leaders having ethical leadership with high level regarding ethical guidance (49.0%) ($M=3.75 \pm 1.04$). While the lowest percentage was related to power sharing (20.0 %) ($M=3.36 \pm 1.03$).

Figure (1) This figure shows that more than one third of nurses (41%) perceived that their nurse leaders have an ethical leadership in high level, while one third (33%) of nurses perceived that their nurse leaders have an ethical leadership in low level, with total mean score = 3.24 ± 0.739 .

Figure (3) demonstrates the levels of studied nurses' green behavior intentions at work. The findings reveal that 41.7% of studied nurses exhibited high green behavior at work. Conversely, 30.5% of them exhibited low green behavior at work, with total mean score = 3.37 ± 0.96 .

Table (3) illustrates that there are positive statistically significant correlations between ethical leadership with and nurses' green behavior ($r= 0.764$ at p value 0.000).

Table (4) shows the independent factors affecting nurses' green behavior. This table proves that nursing ethical leadership was responsible for 31.6% of the variation in nurses' green behavior ($R^2 = 0.316$, $p= 0.000$). Likewise, nurses' voice behavior was responsible for 29.8% of the variation in their green behavior ($R^2 = 0.298$, $p= 0.000$). Accordingly, ethical leadership and nurses' voice behavior are considered predictors of nurses' green behavior.

Table (5) displays that total ethical leadership has statistically significant relationships with nurses' age, gender, education and years of experience at p value < 0.05. As it is evident in the table 80.6 % of nurses who aged from 25-35 years old, 85.5% of female nurses and 66.1 % of them who had bachelor in nursing perceived high level of ethical leadership.

Table (6) reveals that nurses' green behavior has statistically significant relation with nurses' years of experience, age and department at p value < 0.05. It is clear from the table that 81% of nurses who aged from 25-35 years old, 29.1% of nurses working in medical departments, all of them had good level of green behavior.

Table (1): Personal and job characteristics of studied nurses (no=400).

Personal information	No	%
Age		
25 - <35	197	.492
35 - <45	103	25.8
45 - <55	60	15
55 - 60	40	10
\bar{x} S.D 37.61±3.54		
Gender		
Male	120	.300
Female	280	70
Educational Qualification		
Technical institute	144	36
Bachelor's degree of Nursing	256	64
Years of experience		
1 - <5	117	29.3
5 - 10	155	38.7
>10	128	32
\bar{x} S.D 7.85±1.76		
Department of Work		
Medical department	97	24.3
Surgical department	103	25.8
Intensive care unit	63	15.7
Emergency medicine	69	17.2
Pediatric department	36	9
Gynecology department	32	8

Table (2): levels of ethical leadership behaviors as perceived by studied staff nurses (n=400).

Items	High		Moderate		Low		Mean ± SD
	No	%	No	%	No	%	
1. Fairness	132	33	122	30.5	146	36.5	3.47± 0.09
2. Integrity	137	34.3	83	20.7	180	45.0	3.53±1.02
3. People orientation	145	36.3	95	23.7	160	40.0	3.60 ± 1.00
4. Role clarification	148	37	140	35	112	28.0	3.55± 1.04
5. Power sharing	80	20.0	132	33.0	183	47	3.36± 1.03
6. Ethical guidance	196	49.0	120	30	84	21	3.75± 1.04
7. Concern for sustainability	152	38	106	26.5	142	35.5	3.66±1.01

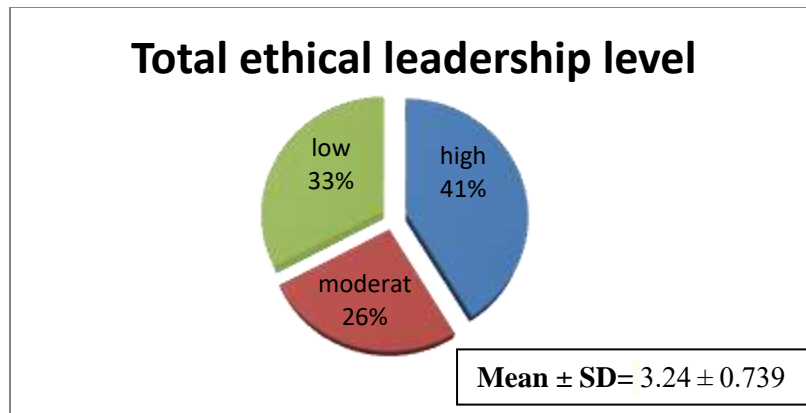


Figure (1) Total levels of ethical leadership as perceived by studied nurses (n= 400)

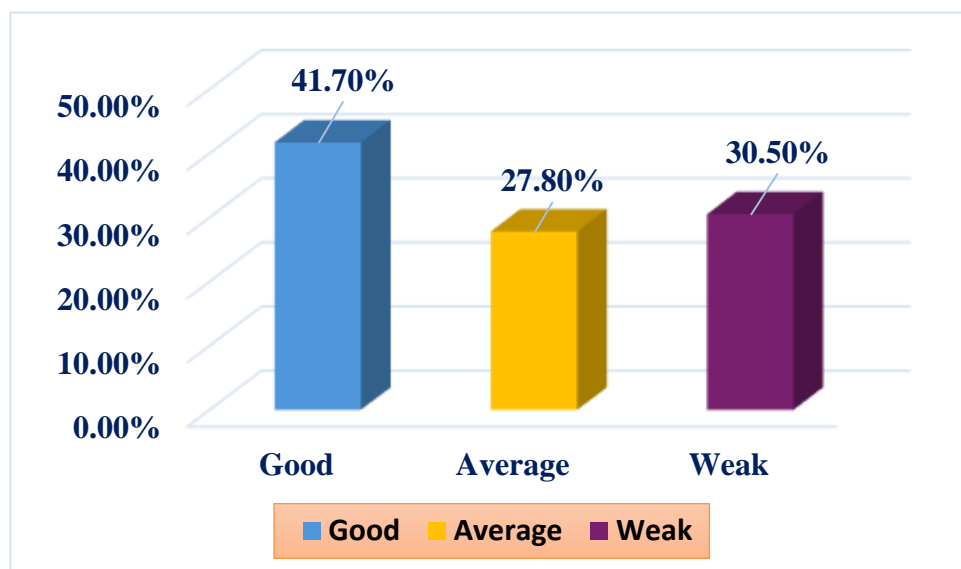


Figure (3) levels of studied nurses' green behavior intentions (n= 400)

Table (3): Correlation between ethical leadership, nurses' voice behavior and green behavior (n=400).

Items	Nurses' green behavior	
	R	P
Ethical leadership	0.764	0.000**
Nurses' green behavior	-	-

(**) Statistically significant at p < 0.01

Table (4): Regression analysis to study the effect of ethical leadership on nurses' green behavior (n=400)

Items	R	R ²	Unstandardized coefficient		t	Sig.
			β	Std. Error		
Ethical leadership	0.562	0.316	0.314	0.026	12.20**	0.000

* Statistically significant at P < 0.05

** Highly statistically significant at P < 0.01

Table (5): Relationship between personal and job characteristics of studied nurses' and their total ethical leadership (n=400).

Items		Total ethical leadership						X ²	P-Value
		High N=164		Moderate N=104		Low N=132			
		No	%	No	%	No	%		
Age	25 - <35	132	80.5	33	31.7	28	21.2	6.810	0.009**
	35 - <45	12	7.3	49	47.1	36	27.3		
	45 - <55	12	7.3	13	12.5	38	28.8		
	55 - 60	8	4.9	9	8.7	30	22.7		
Gender	Male	24	14.6	13	12.5	68	51.5	8.947	0.005**
	Female	140	85.4	91	87.5	64	48.5		
Education	Technical institute	56	34.1	40	38.5	47	35.6	4.204	0.027*
	Bachelor	108	65.9	64	61.5	85	64.4		
Years of experience	1 - <5	47	28.6	31	29.8	40	30.3	4.345	0.021*
	5 - 10	77	47	40	38.5	34	25.7		
	>10	40	24.4	33	31.7	58	44		
Department	Medical department	49	29.9	21	20.2	28	21.2	1.196	0.089
	Surgical department	44	26.8	25	24.0	35	26.5		
	Intensive care unit	22	13.4	19	18.3	21	16		
	Emergency medicine	26	15.8	20	19.2	23	17.4		
	Pediatric department	13	8.0	11	10.6	11	8.3		
	Gynecology department	10	6.1	8	7.7	14	10.6		

*Significant at p <0.05. **Highly significant at p <0.01. Not significant at p >0.05

Table (6): Relationship between personal and job characteristics of studied nurses' and their total nurses green behavior (n=400).

Items		Total green behavior scale						X ²	P-Value
		High N= 167		Moderate N= 111		Low N= 122			
		No	%	No	%	No	%		
Age	25 - <35	135	80.8	49	38.7	18	14.7	3.639	0.037*
	35 - <45	13	7.8	26	23.4	64	52.5		
	45 - <55	10	6	17	15.3	32	26.2		
	55 - 60	9	5.4	25	22.6	8	6.6		
Gender	Male	53	31.7	34	30.6	32	26.2	1.488	0.084
	Female	114	68.3	77	69.4	90	73.8		
Education	Technical institute	55	32.7	27	24.3	61	50	1.545	0.067
	Bachelor	112	67.3	84	75.6	61	50		
Years of experience	1 - <5	47	28.1	28	25.2	42	34.4	9.621	0.003**
	5 - 10	79	47.3	34	30.6	41	33.6		
	>10	41	24.6	49	44.2	39	32		
Department	Medical department	49	29.3	27	24.3	21	17.2	4.764	0.029*
	Surgical department	44	26.3	25	22.5	33	27		
	Intensive care unit	22	13.2	18	16.2	22	18		
	Emergency medicine	26	15.6	17	15.3	25	20.5		
	Pediatric department	13	7.8	13	11.8	10	8.2		
	Gynecology department	13	7.8	11	9.9	11	9.1		

*Significant at $p < 0.05$. **Highly significant at $p < 0.01$. Not significant at $p > 0.05$

Discussion

Ethical leadership can have a positive impact on nurses' voice and green behavior in the workplace. The concept of ethical leadership has received increasing attention from researchers, particularly those interested in the moral crises identified in several organizational contexts; ethical leaders care about ethical conduct and also incorporate it in the surrounding environment (Keck et al., 2020). Ethical leaders also set an example for sustainable practices and promote a culture of environmental responsibility. Since individuals work with high ethical leader, they will feel the approval of the leader for green behavior and demand the subordinates to be responsible for the green behavior (Islam et al., 2020).

In today's globalized world, it has become challenging for organizations to prevent environmental damage and decay as they are the major contributors to these concerns. Researchers in the field of organizational behavior and sustainable development have been concentrating on the role of corporate leaders in deriving employee green behavior (EGB). Therefore, this study was carried out to investigate the relationship between ethical leadership and nurses' voice and green behaviors.

Staff nurses' perception of ethical leadership

The results of the present study found that the highest proportion of studied nurses had good level of ethical leadership. From researchers' point of view, this might be attributed to factors that affected the development of ethical leadership as work experience, type of nursing environment, educational level achieved, adherence to professionalism, critical thinking, and personal factors.

On the other hand, the different principles of ethical leadership that each staff nurse perceived affect nurses' perception of ethical leadership. These results are supported by **Mahran et al., (2022)** who studied the effect of ethical leadership on nurses' job performance in Sohag University Hospital, Egypt and revealed that less than half of them perceived high levels of ethical leadership behavior, while more than half of participants had low levels of ethical leadership behavior.

In agreement with these results, **Badran & Akeel (2022)** studied ethical leadership behavior and organizational cronyism among staff nurses at Obstetrics and Gynecological Hospital affiliated to Ain-Shams University Hospitals, they reported that slightly less than three quarters of studied staff nurses' perception regarding ethical leadership behavior was at moderate level.

In the same context, **Elsayed et al., (2020)** who study the relationship between nurses' perception of ethical leadership and anti-social behavior through ethical climate as a mediating factor and revealed that less than half of participants perceived high levels of ethical leadership behavior. **Sharifabad and Mirjalili (2020)** who assessed ethical leadership, nursing error and error reporting from the nurses' perspective and demonstrated that the level of nursing managers' ethical leadership was moderate from the nurses' point of view. Additionally, the study of **Lemoine et al., (2019)** on nursing managers at the operational, intermediate, and strategic level in Finland, found that the ethical profile of nursing managers was at a high level.

Regarding participants' perception of ethical leadership domains; the highest level was related to ethical guidance domain, people orientation and role clarification while the lowest was for power sharing. Ethical guidance is a major part of ethical leadership that is formed based on an individual development process in society and the structures of personal, educational, and functional values.

Nursing profession was built on ethics. Furthermore, nurses require a high level of ethical guidance because of the prevalence of violence, anxiety, work discontent, discomfort, and ethical conflicts in the practice of nursing. High ethical competency can support nurses in giving morally sound medical care in a demanding hospital setting.

Different tools have been used to assess the ethical leadership in previous studies. Similarly, in previous studies, the highest domain has been reported in a study carried out in Malaysia by **Vikaraman et al., (2021)** to assess ethical leadership practices and trust among public school leaders. They found that the level of ethical leadership practiced the highest mean score was for ethical guidance followed by role clarification but fairness has the least mean score. Also, **Basoro & Nidaw, (2021)** who studied ethical leadership practices and factors affecting it in south Addis Ababa district commercial bank of Ethiopia, reported that high levels of ethical leadership were related to role clarification and ethical guidance.

In the same line, **Asnake & Mekonnen (2019)** reported that role clarification had the highest mean while fairness dimension had the lowest perception level of ethical leadership behaviors.

Contrary to these results, **Mahran et al., (2022)** found that more than two thirds of participants reported high levels at fairness dimension and more than one third reported high levels of power sharing dimension and mentioned that ethical leaders are place importance on being fair, just and eliminating biased treatment and sharing power tend to lead to better outcomes, building loyalty and respect which in turn create positive

relationships. From the research investigator point of view, differences in these findings may be due to the different conditions and skills of the nurses studied

Staff nurses' level of green behavior:

With regard green behavior; less than half of studies nurses reported good green behavior while about one third of them reported weak green behavior. This could be explained by the fact that nurses play a crucial role in implementing sustainable practices such as prefer using personal cups instead of disposable cups, report leaks in bathroom and avoid necessary printing. However, there are no clear workplace policies to guide them in this practice and they are unaware of their responsibility to reduce workplace environmental hazards to make the workplace more sustainable.

These results agree with **Li et al., (2021)** who investigated the moderating role of ethical leadership on nurses' green behavior intentions and real green behavior, and found that nurses' green behavior was low. Unlike to these findings, **Dumont et al., (2017)** assessed effects of green HRM practices on employee workplace green behavior, they reported that individual green behavior was good. Also, **Saleem et al., (2020)** who studied ethical leadership and employee green behavior: A multilevel moderated mediation analysis and they mentioned that employee green behavior mean was good.

Correlation between studied nurses' perception of ethical leadership and nurses' green behaviors.

The results indicate there are positive statistically significant correlations between ethical leadership with and nurses' green behavior. Additionally, ethical leadership is a predictor of nurses' green behavior. Ethical leadership promotes nurses' green initiatives by sharing leaders' views on the environment with their subordinates, establishing organization value, and encouraging mutual awareness. Ethical leaders show their values through their positive green behavior, and setting an example is a chance for managers to deliver value to subordinates.

The above-mentioned results agree with previous findings such as that reported by **Ahmed et al., (2021)** who found significant effect of ethical leadership on employees' green behavior. Also, **Li et al., (2021)** revealed that ethical leadership was also positively correlated with employee green behavior. In the same context, a study in China, conducted by **Chen and Wu (2022)** entitled how to facilitate employees' green behavior? the joint role of green human resource management practice and green transformational leadership. They reported that green transformational leadership significantly influences green behavior. **Saleem et al., (2020)** confirmed a statistically significant positive effect of ethical leadership on green behavior.

Relation between personal characteristics of studied staff nurses and their perception of ethical leadership

The results of the current study revealed that there was highly significant difference with personal and job characteristics of nurses that include (nurses' age, gender, education and years of experience) with their perception of ethical leadership. Conversely, there was no significant relationship between their department and perception of ethical leadership. The possible clarification for these results could be related to that age, years of experience and education play important role among staff nurses that helped them understand and recognize qualities of ethical leadership.

Accordingly, these results are consistent with **Mahran et al., (2022)** revealed that there was highly significant difference with demographic data include (sex, years of experience in nursing, experience in current working place and working place) with participants' perception of ethical leadership. On the contrary, **Mahran et al., (2022)** said that there were no significant differences between demographic data include (age, marital status and number of children) and participants perception of ethical leadership.

The previous results were incompatible with study conducted by **Wibawa & Takahashi, (2021)** they study the effect of ethical leadership on work engagement and workaholism: examining self-efficacy as a moderator and found that gender, marital status, and workplace experience, show insignificant results. Also, they were incompatible with **Wibawa & Takahashi, (2021)** they found that age was significantly different.

Relation between personal characteristics of studied staff nurses and their level of green behavior:

The results of the current study revealed that there was highly significant difference with personal and job characteristics of nurses that include (nurses' age, years of experience and department) with their level of green behavior. Conversely, there was no significant relationship between participants' gender and education with their level of green behavior, the results revealed that older and more experienced nurses have good green behavior. Regarding effect of department; nurses working in medical departments have good green behavior. These results can be explained that as nurses' age and experience increase, their awareness regarding climate change and environmental sustainability increase. In this case, nurses will regard "engaging in green behavior". On the other hand, nurses working in departments have less duties and responsibilities than nurses working in intensive care units, accordingly the follow green behaviors and guidelines of sustainability development. These findings were in line with previous researches as that by **Hasebrook et al., (2022)** who studied green behavior: factors influencing behavioral intention and actual environmental behavior of employees, found that individual characteristics, such as sex, age group, professional status, place of residence and family status, influence internal and external factors of green behavior. Also, **Chen and Wu (2022)** conducted a study to address how to facilitate employees' green behavior, they found that gender, age and education have influence on employees' green behavior.

Contrary to these results, a more recent meta-analysis done by **Katz et al., (2022)**, found a weak positive relationship between age and educational level with employee green behaviors while the relationship between gender and employee green behaviors was not significant.

Recommendations

Based on the findings of this study, the following recommendations can be included:

1. Conducting training programs and workshops for all managerial levels to clarify the concept of ethical leadership, and the extent to which the hospital and staff benefit from ethical leadership.
2. Motivate ethical leaders to become role models fostering cooperation integrity and treat fairly with employee which affects their performance.
3. Nursing leadership should:
 - Develop workplace green teams, influence workplace practices, and policies, and educate patients and families on climate change and health to help provide care that is climate and environment friendly.
 - Create support policies and practices aimed at reducing healthcare waste and related emissions.
4. Future researches: in the future, research should consider the following:
 - Impact study with at least pre-post design to check whether certain measures help to increase actual green behavior.
 - Comparison of green behavioral intention and actual behavior of different target groups.
 - Systematic review of the impact of different relevant factors, such as perceived behavioral control and individual evaluation of the desire and need to perform green behavior.

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