

## Staff Nurses' Perception toward Leadership Effectiveness and Its Relation to Innovative Work Behavior at selected hospital

Nora Elsayed Mohammed <sup>1</sup>, Mohamed Gamal Mostafa <sup>2</sup>

<sup>1</sup>Lecturer, Nursing Administration Department, Faculty of Nursing, Cairo University, Egypt

<sup>2</sup>Lecturer, Nursing Administration Department, Faculty of Nursing, Cairo University, Egypt

### Abstract

**Background:** In recent years, innovation is considered necessary for organizations to adapt to the changing environment and increase need for effective nurse leader for enhancing leadership qualities, supportive work environment that is critical for staff nurses' innovation. **The study aimed to** assess staff nurses' perception toward leadership effectiveness and its relation to innovative work behavior. **Design:** A descriptive correlational design was applied to carry out this study. **Setting:** the study was carried out in all ICUs at emergency hospital which is relevant to Cairo University Hospitals. **Subjects:** A convenience sample of 73 staff nurses who volunteered to be involved in this study was included. **Tools:** three tools were utilized to collect the study data as follows:(a) personal characteristics sheet (b) Leadership Effectiveness Questionnaire, (c) Innovative Work Behavior Questionnaire. **Results:** findings from the current study showed that more than half (61.6%) of staff nurses had a high perception level regarding leadership effectiveness. Also, the highest percentage (76.7%) of them had a high perception level regarding innovative work behavior. **Conclusions:** the present study concluded that there was significant positive correlation between overall perception of leadership effectiveness and innovative work behavior of staff nurses. **Recommendations:** Raise the nursing leaders' awareness regarding their role in building trust relationships with their followers and in creating healthy work environment that enhance their innovations.

**Keywords:** Leadership Effectiveness, Innovations, Work Behaviors, and Staff Nurses

### Introduction

Since ancient times of history, man has known that the distinction between victory and loss is mainly due to the effectiveness of leadership, whether in wars or in other sectors of human life. Every group and organization need effective leadership, as it constitutes the vital axis that underpins a variety of activities in private and public organizations.<sup>(1)</sup> One of the most important factors in any organization's success is its leadership, as it plays an important role in directing all organizational resources to achieve the desired goals. The level of goal achievement is correlated with the effectiveness of the leadership in

employing the staff enthusiasm by increasing their motivation and releasing their energies to achieve a high level of organizational commitment.<sup>(2)</sup>

Management and leadership of healthcare professionals are vital for enhancing quality and integration of care. Leadership is the practice of directing and coordinating the efforts of a team or group of individuals towards a common objective. It can also be defined as the relationship between the person who led and those who decide to follow.<sup>(3)</sup> Leadership has also been described in terms of the power relations that exists between leaders and followers. Based on this perspective, leaders have formal

authority and use it to influence followers. Others view leadership as a transformative process that motivates followers to exceed what is typically expected of them. Moreover, Some scholars view leadership from a competency-based viewpoint. This point of view places special emphasis on the necessary abilities (knowledge and skills) for successful leadership.<sup>(4)</sup>

Leadership effectiveness begins with the intrinsic ability to believe in oneself. It involves a maturity level, principle and competence that changes into the determination and clarity of vision that armored leaders with confidence needed to assume the responsibility of enhancing motivation, self-esteem, and team cooperation. The primary responsibility of leaders is to become highly aware of their work surroundings. Leaders must ensure that the work surroundings conditions are appropriate for their followers to carry out their duties and responsibilities.<sup>(1)</sup> The most effective leaders should be able to facilitate changes that lead to effective development and progress. They believe in enhancing the growth of manpower resources. They adopt the perspective that the organization can effectively expand and flourish only if its human resources are treated as basic assets.<sup>(5)</sup>

To understand the characteristics of effective leadership, it is crucial to take into account the intrinsic characteristics, namely physical capacity, energy level and stress tolerance. These traits enable the leaders to take control over stress and other challenging circumstances, even though they are overloaded with work tasks. Effective leaders should be aware with skills of time management and provide adequate time for all tasks and duties; also require physical

vitality and emotional intelligence.<sup>(6)</sup> Secondly, it requires the ability to remove any potential barriers and overcome the various challenges. The development and promotion of communication skills is necessary for effective leadership to communicate with their subordinates, empower their staff, manage, and assign tasks, pay attention to criticism and exhibit flexibility to address problems in the work environment that changes constantly.<sup>(7)</sup>

In response to the rapid advancements and progress in technology and communications aspects over the recent decades, innovation became mandatory for organizations survival, growth, and competition especially in health care organizations.<sup>(8)</sup> Innovation is a change that results from new idea generation and adaptation. Creativity occurs with novel ideas relying on the institution management and individuals producing novel ideas. The knowledge and experience of nurses are required to create innovative solutions to solve the novel problem.<sup>(9)</sup> Nurses' innovative behavior in the work environment is seen as crucial requirement for organizational survival. Additionally, the evolving economic environment, globalization, and rising competing demands have also increased the need of innovation and innovative behaviors.<sup>(10)</sup>

Innovative work behaviors is described as behaviors of an individual to create and intentionally introduce new and valuable ideas, processes, methods, or services.<sup>(11)</sup> Furthermore, innovative work behavior is all individual behaviors that aim to generate, process, apply, or implement new ideas about how to do things, including novel product ideas, techniques, processes, or work procedures, with the intention of enhancing the organization efficiency.<sup>(12)</sup> It

is also presented as a cognitive and motivating process that entails coming up with ideas, looking for novel ones, sharing them, initiating application activities, including others, and overcoming hurdles.<sup>(3)</sup> Innovative work behavior is not a part of nurses' main responsibilities. It is excessive responsibility that is outside the scope of nurses' job description for attempts to help in achievement of the organizational goals.<sup>(9)</sup> Idea generation, coalition building, and implementation are the three phases of innovative work behavior. In the first phase (idea generation), innovation starts with problem identification, problem definition and solution discovery for managing the problem. Solution discovery is based on a novel idea or a novel application of existing ideas. In the second phase (coalition building), the innovator searches for support for his novel ideas. As innovation involves both change and resistance to change, the innovator should form alliances to support the novel ideas and ensure their commitment for the innovation. In the third phase (idea implementation), the innovative ideas must be transformed into practice. Persistence is required in the implementation process to control over change resistance and ensure the achievement of desired outcomes.<sup>(12)</sup>

### **Significance:**

The functionality of nursing staff in healthcare organizations is greatly influenced by leadership effectiveness. An incompetent leader can diminish employee morale, creativity, and lead to job dissatisfaction.<sup>(13)</sup> Zawawi et al. (2020)<sup>(14)</sup> found that one of the hindering factors that impede organizational success is ineffective leaders. So, it is necessary to assess and identify the competencies or skills required for effective nursing leaders

to adequately deal with organizational challenges and to enhance staff competitiveness and performance efficiency. In Egypt, it was noted that the current healthcare systems do not offer a supportive working condition that enhance staff nurses innovative work behaviors. Also, it was noted that studies on the relationship between leadership effectiveness and work innovative behavior in the health care sector are scarce.

The current study would grasp the attention of study nurses and their organization to the importance of innovative work behaviors and stay away from routine and bureaucracy. Moreover, the healthcare organizations in Egypt are facing intense competitive market which requires a great care to create positive working environment for the advancement and utilization of beneficial and effective ideas of their staff. It is clear that innovative behavior of nursing staff is a significant need for an organizations' innovation, productivity and sustainability. Consequently, this study's goal was to assess staff nurses' perception toward leadership effectiveness and its relation to innovative work behavior.

### **Aim of the Study**

This study aimed to assess staff nurses' perception toward leadership effectiveness and its relation to innovative work behavior at selected hospital.

### **Research Questions**

The following research questions were proposed in order to achieve the study aim:

- 1- What is the staff nurses' perception toward leadership effectiveness?
- 2- What is the staff nurses 'level of innovative work behaviour?

- 3- Is there a relationship between staff nurses' perception of leadership effectiveness and their level of innovative work behaviour?

### **Subjects and Methods**

#### **Research Design:**

To accomplish the aim of the current study, a descriptive correlational research design was used.

#### **Setting:**

This study was carried out in all intensive care units (surgical, neurology, medical, chest and cardiac unit) at New Emergency and Burn Hospital (185) which is affiliated to Cairo University Hospital, in Egypt which provide free services. It has 7 floors and the total bed capacity is 120.

#### **Study Sample:**

A convenience sample of 73 staff nurses who are working in the study settings and available during the data collection time was constituted the study sample. All staff nurses should have at least one year's experience, working full-time and providing direct nursing care activities for the patients.

#### **Tools of Data Collection:**

For the purpose of the current study, three tools were used for data collection:

#### **1st tool: personal characteristics datasheet:**

It was developed by the researchers to assess the personal characteristics of the study subjects such as age, educational qualification, unit, and years of experience.

#### **2<sup>nd</sup> tool: leadership effectiveness questionnaire**

It is self-administered; structured questionnaire was developed by the researcher through review of recent related literature.<sup>(15, 16)</sup>

It was used to assess the staff nurses' perception toward head nurses'

leadership effectiveness. The questionnaire consisted of 33 items categorized under ten main dimensions namely: Effective communication (5 items), team building (3 items), Change management (5 items), Conflict management (2 items), Negotiation (2 items), Management of organisational climate and culture (2 items), Inspiration (3 items), trust and credibility (3 items), Professionalism (6 items) and Commitment to customers (2 items).

**Scoring System:** the staff nurses' responses were checked against three-point Likert scale ranging from; (1) disagree, (2) average and (3) agree. According to the total scores of nurses' responses, the head nurses' leadership effectiveness was classified as follow:

- High effectiveness:  $\geq 75\%$
- Moderate effectiveness:  $60 < 75\%$ .
- Low effectiveness:  $< 60\%$ <sup>(16)</sup>

#### **3<sup>rd</sup> tool: innovative work behavior questionnaire**

It is self-administered; structured questionnaire was developed by De Jong, (2007)<sup>(17)</sup> and modified by the researchers. It was used to assess the staff nurses' perception toward their innovative work behaviors. It consisted of (11) items categorized under four dimensions, namely: Idea exploration (4 questions), Idea generation (2 questions), Idea championing (2 questions) and Idea implementation (3 questions).

**Scoring system:** the staff nurses' responses were checked against three-point Likert scale ranging from; (1) never, (2) sometimes and (3) always. According to the total scores of staff nurses' responses, the level of innovative

work behaviours was classified as follow:

- High level of innovative work behaviours:  $\geq 75\%$ .
- Moderate level of innovative work behaviours:  $65 - < 75\%$ .
- Low level of innovative work behaviours:  $< 65\%$ <sup>(17)</sup>

#### **Validity of the study tools:**

The study tools were submitted to a panel of five experts in the field of nursing administration. They asked to judge the content's coverage, clarity, wording, length, format, and overall appearance of the study tools. The two tools were translated into Arabic to match staff nurses' level of education. Double English –Arabic- English translation was done.

Based on experts' comments and recommendations, necessary modifications were done as correcting some grammatical errors and rephrasing of some sentences.

#### **Reliability of the study tools:**

Internal consistency reliability of the study tools was determined by using Cronbach's alpha coefficient for independent variable. Internal consistency using Cronbach's alpha was 0.97 for leadership effectiveness questionnaire and was 0.95 for innovative work behavior questionnaire.

#### **Procedure:**

Upon receiving the agreement of both medical and nursing directors of study hospital, the researchers proceeded with the data collection. Researchers met the staff nurses during two shifts (morning and afternoon) in their units to explain the purpose of the study and invited them to voluntarily participate and gain their acceptance by formal written consent. The study questionnaires were distributed individually by the researchers to staff nurses

with giving them instructions about how they will be filled, they took from 15 to 25 minutes to fill the questionnaires. The filled questionnaires were collected at the same time and revised to check their completeness to avoid any missing data. The data were collected over 2 months, from May to June 2022.

#### **Ethical Consideration:**

Before conducting the study, an official approval was received from the Faculty of Nursing, Cairo University's scientific research ethics committee (RHDIRB2019041701). Also, the medical and nursing directors of the study hospital gave their official agreement for the study to be carried out. Each participant had the choice to accept or decline participating in the study; participation was entirely voluntary. Informed consent was acquired from the study's nurses. Each participant had the option of quitting from the study at any time, and Subjects had been informed that their data wouldn't be used in another study without their permission. Anonymity and confidentiality were ensured through the coding of the data. The ethical issues considerations include clarifying the aim and scope of the study, participation was protected from any risk. Collected data were used for the purpose of the research.

#### **Statistical Design**

After the data collection was finished, the "statistical package for the social science" (SPSS), version 21 was utilized to score, tabulate, and analyze the data. Descriptive statistics as frequency, mean, and standard deviation were applied in data analysis presented in this study. Relative statistical tests of significance, such as (correlation coefficient, independent t-test) were employed to discover the relationships between the study variables. The p value is the

significance level, and the significance level for all statistical analyses was at  $\leq 0.05$  (P-value) while, the p value  $> 0.05$  indicates non-significant result.

### Results

Table (1) shows that about half (50.7%) of nurses were in the age group that ranged between (21<30) years old with mean  $\pm$ SD. (32.3 $\pm$ 8.2). As for educational level, the highest percentage of staff nurses (63.0%) have nursing diploma. While the highest percentage (28.8%) of nurses worked in surgical ICU. In addition, about half (50.7%) of them had 1 to  $< 10$  experience years with mean  $\pm$ SD (32.3 $\pm$ 8.2).

Table (2): It is clear from the above table that staff nurses had perceived a high total leadership effectiveness (81%). Data in the same table indicates that the highest mean percentage scores (84.5% & 84.3%) of staff nurses' perception toward the leadership effectiveness dimensions were related to commitment to patients and trust and credibility. While the lowest mean percentage score (77.2%) was related to the change management dimension.

Figure (1): shows that more than half (61.6%) of staff nurses had high perception level regarding leadership effectiveness.

Table (3) It is obvious from the above table that staff nurses had a high level of innovative work behavior: (85.2%). Moreover, the highest mean percentage scores (87.5% & 86.0%) of staff nurses'

perception toward the innovative work behaviors dimensions was related to idea generation and idea implementation dimensions. While the lowest mean percentage score (83.9%) was related to idea exploration dimension.

Figure (2): Illustrates that the highest percentage (76.7%) of staff nurses had a high level regarding their innovative work behaviors.

Table (4): shows that there was highly significant positive correlation ( $r=.55^*$ ,  $p .0001$ ) between staff nurses' total perception toward leadership effectiveness and total perception of their innovative work behaviors.

Table (5): illustrates that there was significant statistical relation between staff nurses' age and experiences and total perception of innovative work behaviors. While there was no statistical relation between nurses' age, experiences and education level and total perception of leadership effectiveness.

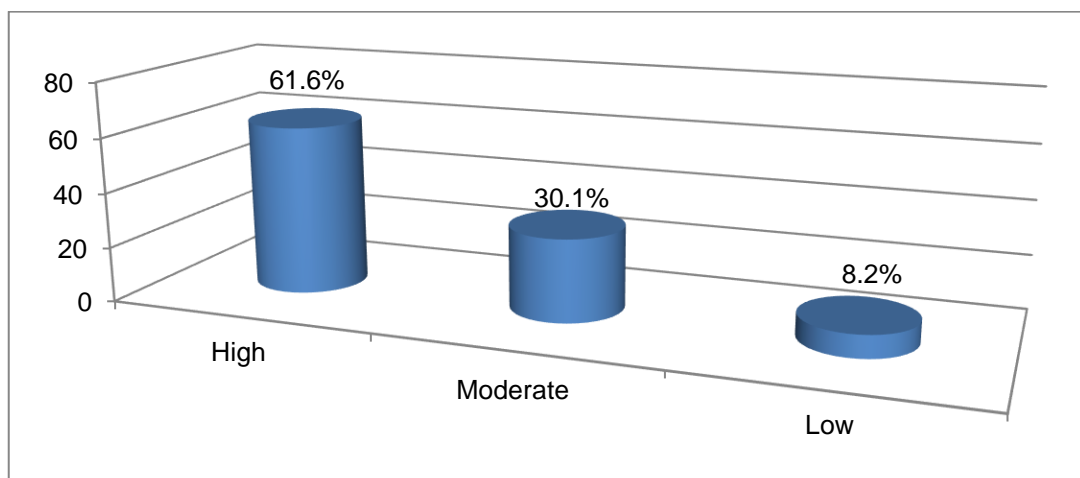
Table (6): depicts that the neurological ICU had the highest mean for total leadership effectiveness and total innovative work behavior. Also, the table shows that there was significant positive correlation between staff nurses' working units and both study variables.

**Table (1): Frequency distribution of staff nurses' personal characteristics data (n= 73)**

<b>Staff nurses' personal characteristics data</b>	<b>Frequency (N)</b>	<b>%</b>
<b>Age</b>		
21 to <30	37	50.7
30 to <50	20	27.4
≥ 50	16	21.9
<b>Mean ±SD</b>	32.3±8.2	
<b>Educational level</b>		
▪ Technical diploma in nursing	46	63.0
▪ Associate technical diploma	26	35.6
▪ Bachelor degree in nursing	1	1.4
<b>Unit</b>		
▪ Surgical ICU	21	28.8
▪ Medical ICU	19	26.0
▪ Cardiac ICU	11	15.1
▪ Chest ICU	12	16.4
▪ Neurological ICU	10	13.7
<b>Years of Experience</b>		
▪ 1to < 10 years	37	50.7
▪ 10 to <20	20	27.4
▪ ≥ 20	16	21.9
<b>Mean ±SD</b>	12.9±9.3	

**Table (2): Mean percentage of staff nurses' perception toward leadership effectiveness dimensions (n=73).**

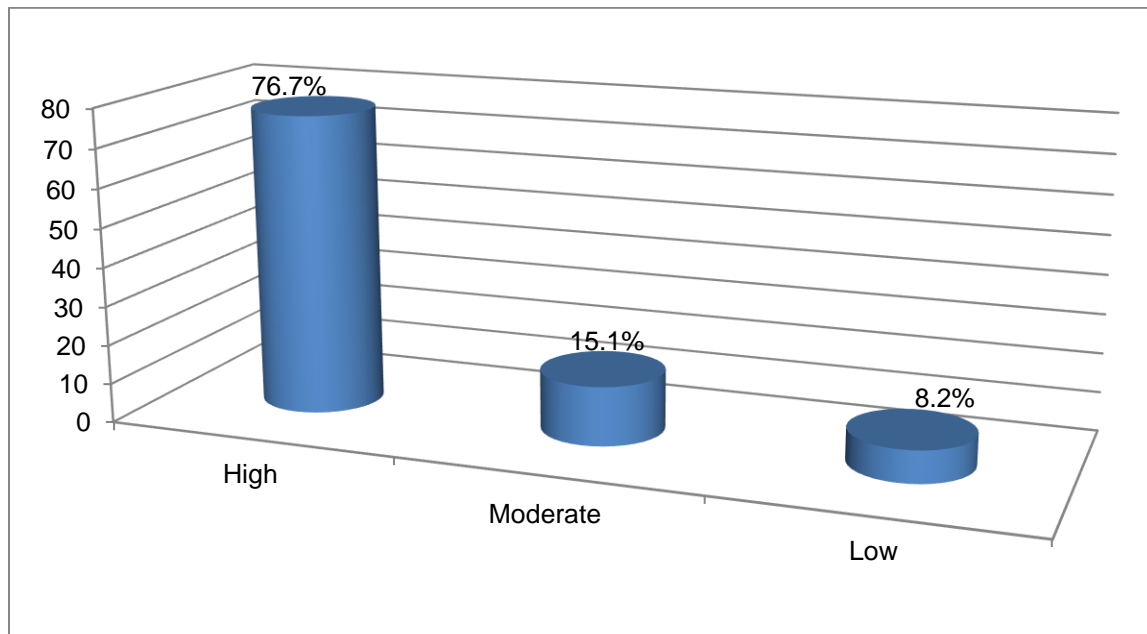
Leadership effectiveness dimensions	Minimum score	Maximum score	Mean	SD	Mean %
Effective communication	5	15	12.29	2.96	81.9
Team building	3	9	7.45	2.02	82.8
Change management	5	15	11.58	3.15	77.2
Conflict management	2	6	4.71	1.40	78.5
Negotiation	2	6	4.73	1.36	78.8
Management of organizational climate and culture	2	6	4.67	1.49	77.8
Inspiration	3	9	7.12	2.06	79.1
Trust and credibility	3	9	7.59	1.98	84.3
Professionalism	6	18	15.01	3.60	83.4
Commitment to patient	2	6	5.07	1.27	84.5
Total	33	99	80.22	17.50	81

**Figure (1): Total levels of staff nurses' perception regarding the leadership effectiveness (n=73)**



**Table (3): Mean percentage of staff nurses' perception toward innovative work behaviors dimensions (n= 73).**

Innovative work behaviors dimensions	Minimum score	Maximum score	Mean	SD	Mean %
Idea exploration	4	12	10.07	2.21	83.9
Idea generation	2	6	5.25	1.11	87.5
Idea championing	2	6	5.06	1.25	84.3
Idea implementation	3	9	7.74	1.72	86.0
Total	11	33	28.11	5.70	85.2

**Figure (2): Staff nurses' levels regarding the innovative work behaviors (n=73)**

**Table (4): Correlation between leadership effectiveness dimensions and innovative work behaviors dimensions(n=73).**

leadership effectiveness dimensions	Innovative work behaviors dimensions								Total	
	Idea exploration		Idea generation		Idea championing		Idea implementation			
	r	p	r	p	r	p	r	p	r	p
<b>Effective communication</b>	.4	.0001*	.41	.0001*	.4	.0001*	.43	.0001*	.45	.0001*
<b>Team building</b>	.28	.01	.28	.01	.29	.01	.32	.008	.32	.005*
<b>Change management</b>	.48	.0001*	.48	.0001*	.47	.0001*	.49	.0001*	.53	.0001*
<b>Conflict management</b>	.39	.001*	.18	.11	.37	.001*	.37	.001*	.38	.001*
<b>Negotiation</b>	.27	.02*	.28	.01*	.37	.001*	.33	.004*	.34	.003*
<b>Management of organizational climate and culture</b>	.41	.0001*	.41	.0001*	.32	.005*	.4	.0001*	.43	.0001*
<b>Inspiration</b>	.46	.0001*	.31	.007	.35	.002	.4	.0001*	.44	.0001*
<b>Trust and credibility</b>	.43	.0001*	.47	.0001*	.32	.008	.33	.004	.43	.0001*
<b>Professionalism</b>	.51	.0001*	.54	.0001*	.54	.0001*	.51	.0001*	.58	.0001*
<b>Commitment to patients</b>	.43	.0001*	.48	.0001*	.37	.001	.37	.001	.45	.0001*
<b>Total</b>	.51	.0001*	.49	.0001*	.48	.0001*	.5	.0001*	.55	.0001*

**Table (5): Relationship between staff nurses' perception of total leadership effectiveness and work innovative behaviors and their Age, Experiences and educational level(n=73).**

Demographic data	Leadership effectiveness		Work innovative behaviors	
	F	p	F	p
Age	.12	.3	.31	.007*
Experience	.07	.55	.23	.04*
Education level	.03	.77	.03	.77

**Table (6): Relationship between staff nurses' total perception of leadership effectiveness and innovative work behaviors and their working unit (n=73).**

Dimensions	Units										F	P
	Surgical ICU		Medical ICU		Cardiac ICU		Chest ICU		Neurological ICU			
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Leadership effectiveness	86.19	16.82	80.26	18.65	72.82	11.75	69.58	18.38	88.50	13.47	3.0	.02*
Innovative work behavior	31.44	2.48	27.79	5.30	24.18	3.76	23.67	8.04	31.57	2.79	8.2	.0001*

**Discussion:**

Effective leadership is frequently viewed as a crucial component and aspect of management that has an impact on staff level of commitment to their organization and has the potential to enhance the organizational productivity, creative work behaviors, job satisfaction among staff nurses and a sense of confidence to fulfill organizational objectives. <sup>(18)</sup> Therefore, the aim of this study was to assess staff nurses' perception toward leadership effectiveness and its relation to innovative work behavior. As regards staff nurses' perception toward leadership effectiveness, the findings of the present study indicated that more than half of staff nurses had high perception level

regarding leadership effectiveness dimensions with the highest mean percentage for both commitment to patients, trust and credibility. While the lowest mean percentage was related to change management. These findings could be due to the fact that nursing leaders' credibility and honesty are as necessary as food and water for staff nurses as it is considered a binding promise between any leader and their followers. Overall, it stands out as the most crucial trait for the interaction between the leader and the constituent. First and foremost, the presence of effective nursing leader and even all the health care team is intended to serve the patient and provide the highest possible quality of care, so the

nursing leader commitment to patient is inevitable issue for the leadership effectiveness that should be accomplished.

These findings were in harmony with Mostafa & EL-Sayed, (2021)<sup>(19)</sup> who reported that the highest nurses' perception level of leadership effectiveness dimensions was related to trust and healthier work environments which allow good relation with others. As well as, Abd El Muksoud et al, (2022)<sup>(20)</sup> who investigated leadership behaviors and innovative work behaviors among nurses at ministry of health in Egypt; the study showed that nurses had a positive view about the transformational leadership behaviors.

Regarding to staff nurses' perception toward innovative work behavior, the findings of the present study revealed that the highest percentage of staff nurses had high perception level regarding innovative work behavior dimensions with the highest mean percentage for both idea generation and idea implementation. While the lowest mean percentage was related to idea exploration. From the researchers' point of view, the potential explanation for these findings may be attributed to the fact that the innovation behavior and Innovation climate nowadays are receiving great attention and support from the hospital leaders and managers to enhance these behaviors in their organizations. Additionally, the nursing leaders in the study hospital may give the chance for their staff to freely communicate with them regarding work-related problems and share other techniques to solve these problems via generation, contribution, and implementation of innovative ideas.

The current study findings are consistent with those of a study done by Mahgoub, Shazly, & El-sayed, (2019)<sup>(21)</sup> who found that the highest percentage of staff nurses had high perception level regarding innovative work behavior with the highest mean percentage for idea championing and idea implementation. As well as, this result is supported by Shama & Ahmad, (2021)<sup>(22)</sup> who found that the highest percentage of the studied participants' had positive innovative behavior with the highest agreement in the domains of nurses' vision, Support for innovation among nurses, monitoring and work communication.

Moreover, Kamel & Aref (2017)<sup>(9)</sup>, pointed out that about half of staff nurses had a highly perception level toward innovative work behaviors; the results showed that about half of studied nurses always generate original solutions to solve problems and about two thirds of them always systematically introduce innovative ideas into work practices.

On the contrary, the previous findings were incongruent with the results of a study done by Ahmed, Ata & Abd Elhamid, (2019)<sup>(23)</sup> who revealed that about half of the nurses have a high perception level of innovative work behaviors. Furthermore, the previous findings were inconsistent with Abd El-Fattah, (2017)<sup>(24)</sup> who pointed out that more than half of nurses had a moderate level of innovative work behaviors. Additionally these findings were incongruent with Jung & Yoon, (2018)<sup>(25)</sup> who revealed that nurses showed a moderate perception level of innovative behavior.

Concerning the relationship between the leadership effectiveness dimensions and

work innovative behaviors dimensions, the present study showed highly statistically significant positive correlations of staff nurses' perception toward leadership effectiveness and innovative work behaviors. This finding highlighted the significance of effective leadership and its crucial role in fueling the employees' innovative behaviors. As effective leaders focus on creating suitable social and working environment to achieve the organizational goals and taking care of the needs of the staff which positively affects organizational reputation.<sup>(26)</sup> Thus, employees may experience higher work performance when they have a strong rapport with their effective leaders and moral organizations, which fosters their willingness to participate in creative activities.<sup>(27)</sup>

The previous result was supported with a study done by Kul & Sonmez, (2021)<sup>(7)</sup> who demonstrated that, there was a high statistical significant positive correlation between leadership behaviors and nurses' innovative behaviors and job performance. Also, this finding was congruent with Dong & Zhong, (2021)<sup>(28)</sup> who reported that there was positive correlation between the responsible leadership and fostering the innovative behavior of employees through enhancing employees' self-esteem and subsequently encourage them to engage in more creative activities.

In addition, this finding goes in the same line with Islam, Furuoka & Idris, (2020)<sup>(29)</sup> who revealed that there was a significant correlation between transformational leadership and the employees readiness for change and

creativity. Also, this finding was congruent with Wang, Shen, Chen & Carmeli, (2021)<sup>(30)</sup> who reported that “environmentally responsible leaders drive environmental innovation by developing a sense of collective environmental identification, which facilitates employees' engagement in the organizational innovation behavior”.

Regarding to relation between staff nurses' Age, Experiences and educational level with both study variables, the current study indicated that there was significant statistical relation between staff nurses' age and experiences and total perception of innovative work behaviors. These results could be explained by familiarity and knowledge of experts and old nurses with work environment norms, rules, policies and procedures that qualify them to create innovative solutions and generating new ideas for solving the new problems. This finding was consistent with Mahgoub, Shazly, & El-sayed, (2019)<sup>(21)</sup> who clarified the presence of statistically significant relations between staff nurses' innovative behavior and their age and experience. Also the previous finding was in agreement with Bunpin, Chapman, Blegen, & Spetz, (2016)<sup>(31)</sup> who found that there was statistically significant difference between the nurses innovative behavior and their personal characteristics.

On the other hand, the previous finding was incongruent with Shama & Ahmad, (2021)<sup>(22)</sup> who revealed that there were no statistical significant differences between nurses' age, gender, and years of experience and their total innovative behavior respectively. Although the same study was in agreement

with the current study finding that showed insignificant relation between the nurses' educational level and their innovative behavior.

Moreover, the present study indicated that there was no significant relation between staff nurses' educational level and innovative work behavior. This finding was incongruent with Mostafa & EL-Sayed, (2021)<sup>(19)</sup> who demonstrated that there was a statistical significant relationship between nurses' level of innovative work behaviors and their educational level. Also Bunpin, Chapman, Blegen, & Spetz, (2016)<sup>(31)</sup> who explored the connection between innovative work behaviors, work satisfaction, work engagement and burnout in Greece, and they revealed a significant relationship between nurses' levels of creative work behaviors and their educational backgrounds.

As regards to relationship between leadership effectiveness dimensions and personal characteristics of staff nurses, the study results demonstrated absence of statistically significant relation between staff nurses' perceptions of leadership effectiveness and their personal characteristics. This result was consistent with the result of Boerrigter, (2015)<sup>(32)</sup> who indicated that there is no direct relationship between leaders' age and leader effectiveness. Also this finding was in the same line with Mohanty, Ara Begum, & Kar, (2016)<sup>(33)</sup> who found that age and work experience were negatively related to leadership effectiveness. While this finding

was incongruent with Ahmed, Ata& Abd Elhamid, (2019)<sup>(23)</sup> who revealed a statistically significant correlation between nurses' perception of leadership behavior and their education and years of experience.

### **Conclusion**

The present study concluded that nurses highly perceived leadership effectiveness and innovative work behaviors. There was a statistically significant correlation between the total perception of staff nurses toward leadership effectiveness and their total perception of innovative work behavior.

### **Recommendations:**

- Raise the nursing leaders' awareness regarding the importance of building trust relationships with their followers.
- Nurse leaders must realize their crucial role in creating healthy work environments that allow nurses to think more creatively and generate new ideas.
- Hospital administrators should support the nurse leaders and empower them and ensure the availability of needed resources to enhance their effectiveness.
- The nurse leaders should provide feedback and appreciate the nurses' innovative efforts.
- Further research studies are recommended to detect the possible moderating factors that enhance the nurses innovative work behavior.

### **Financial support and sponsorship**

Nil.

### **Conflicts of interest**

There are no conflicts of interest.

## References

1. Ali BJ, Anwar G. Strategic leadership effectiveness and its influence on organizational effectiveness. *International Journal of Electrical, Electronics and Computers*. 2021 Mar 28;6(2).
2. Madanchian M, Hussein N, Noordin F, Taherdoost H. Leadership effectiveness measurement and its effect on organization outcomes. *Procedia Engineering*. 2017 Jan 1;181:1043-8.
3. Masood M, Afsar B. Transformational leadership and innovative work behavior among nursing staff. *Nursing inquiry*. 2017 Oct;24(4):e12188.
4. Cherian S, Karkada S. A review on leadership in Nursing. *International journal of nursing research and practice*. 2017;4(1):58-66.
5. Javed B, Khan AK, Quratulain S. Inclusive leadership and innovative work behavior: examination of LMX perspective in small capitalized textile firms. *The Journal of psychology*. 2018 Nov 17;152(8):594-612.
6. Ardueser C, Lehenbauer K. Traits of Effective Leaders: A Literature Review. In *Proceedings of the 19th International RAIS Conference, October 18-19, 2020* Oct (No. 021a). Research Association for Interdisciplinary Studies.
7. Kül S, Sönmez B. The effect of nurse managers' servant leadership on nurses' innovative behaviors and job performances. *Leadership & Organization Development Journal*. 2021 Aug 11;42(8):1168-84.
8. Blank S. McKinsey's three horizons model defined innovation for years. Here's why it no longer applies. *Harvard Business Review*. 2019 Feb 1:1-5.
9. Kamel FF, Aref MA. Staff nurses perception toward organizational culture and its relation to innovative work behavior at critical care units. *American journal of nursing science*. 2017 Jun;6(3):251-60.
10. Bani-Melhem S, Zeffane R, Albaity M. Determinants of employees' innovative behavior. *International Journal of Contemporary Hospitality Management*. 2018 Mar 19.
11. Chatchawan R, Trichandhara K, Rinthaisong I. Factors affecting innovative work behavior of employees in local administrative organizations in the South of Thailand. *International Journal of Social Sciences and Management*. 2017 Jul 27;4(3):154-7.
12. Choi WS, Kang SW, Choi SB. Innovative behavior in the workplace: An empirical study of moderated mediation model of self-efficacy, perceived organizational support, and leader-member exchange. *Behavioral Sciences*. 2021 Dec;11(12):182.
13. Niinihuhta M, Häggman-Laitila A. A systematic review of the relationships between nurse leaders' leadership styles and nurses' work-related well-being. *International Journal of Nursing Practice*. 2022 Oct;28(5):e13040.
14. Zawawi AM, Kee DM, Sauking AS, Annis AW, Mustafa AN, Dehrab A, Chandel N. Factors Affecting Organizational Success: A Case Of Body Glove. *Journal of the Community Development in Asia (JCDA)*. 2020 Jan 20;3(1):54-62.

15. Aarons GA, Ehrhart MG, Farahnak LR. The implementation leadership scale (ILS): development of a brief measure of unit level implementation leadership. *Implementation Science*. 2014 Dec;9:1-0.
16. Avolio BJ, Gardner W, Walumbwa FO. Authentic leadership questionnaire (ALQ). *Default journal*. 2007.
17. De Jong JP, Den Hartog DN. How leaders influence employees' innovative behaviour. *European Journal of innovation management*. 2007 Jan 30;10(1):41-64.
18. Abasilim UD, Gbrevbie DE, Osibanjo OA. Leadership styles and employees' commitment: Empirical evidence from Nigeria. *Sage Open*. 2019 Jul;9(3):2158244019866287.
19. Abdel Azem Mostafa H, Hassan EL-Sayed Mahfouz H. Head nurses' leadership effectiveness, communication skills and mindfulness: It's' relation to staff Nurses' innovative work behavior. *Egyptian Journal of Health Care*. 2021 Mar 1;12(1):1011-32.
20. Abd El Muksood NO, Metwally FG, Ata AA. Leadership Behaviors and Innovative Work Behaviors among Nurses. *Zagazig Nursing Journal*. 2022 Jul 1;18(2):1-4.
21. Mahgoub AE, Mostafa Shazly M, Mohammed El-sayed S. Relationship between work environment and innovative behavior among staff nurses. *Egyptian Journal of Health Care*. 2019 Sep 1;10(3):64-76.
22. Shama SS, Ahmad GM. The Relationship between Nurse's Innovative Work Behavior and Their Job Satisfaction. *International Journal of Novel Research in Healthcare and Nursing*. 2021, 8 (1), 596-606.
23. Ahmed AK, Ata AA, Abd-Elhamid ZN. Relationship between the leadership behaviors, organizational climate, and innovative work behavior among nurses. *American Journal of Nursing Research*. 2019;7(5):870-8.
24. Abd El MA. Innovation behavior levels and its relation with TIGER-based nursing informatics competencies among critical care nurses. *Egyptian Nursing Journal*. 2017 May 1;14(2):59.
25. Jung HS, Yoon HH. Improving frontline service employees' innovative behavior using conflict management in the hospitality industry: The mediating role of engagement. *Tourism Management*. 2018 Dec 1;69:498-507.
26. Javed M, Ali HY, Asrar-ul-Haq M, Ali M, Kirmani SA. Responsible leadership and triple-bottom-line performance—do corporate reputation and innovation mediate this relationship?. *Leadership & Organization Development Journal*. 2020 May 4;41(4):501-17.
27. Voegtlin C, Frisch C, Walther A, Schwab P. Theoretical development and empirical examination of a three-roles model of responsible leadership. *Journal of Business Ethics*. 2020 Dec;167:411-31.
28. Dong W, Zhong L. Responsible leadership fuels innovative behavior: The mediating roles of socially



- responsible human resource management and organizational pride. *Frontiers in psychology*. 2021 Dec 10;12:5885.
29. Islam MN, Furuoka F, Idris A. Transformational leadership and employee championing behavior during organizational change: the mediating effect of work engagement. *South Asian Journal of Business Studies*. 2020 Oct 9;11(1):1-9.
30. Wang Y, Shen T, Chen Y, Carmeli A. CEO environmentally responsible leadership and firm environmental innovation: A socio-psychological perspective. *Journal of Business Research*. 2021 Mar 1;126:327-40.
31. Bunpin JJ, Chapman S, Blegen M, Spetz J. Differences in innovative behavior among hospital-based registered nurses. *The Journal of Nursing Administration*. 2016 Mar 1;46(3):122-7.
32. Boerrigter CM. *How leader's age is related to leader effectiveness: Through leader's affective state and leadership behavior* (Bachelor's thesis, University of Twente).2015.
33. Mohanty J, Ara Begum J, Kar B. Nuances of Leadership Effectiveness: Challenges of Context and Demographics. *International Journal on Leadership*. 2016;4(1):15.