

Leadership Behaviors and Innovative Work Behaviors among Nurses

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Abstract

Background: Leadership behaviors have often been seen as a vital element that influences the level of commitment and innovative work behaviors of employees within the organization to achieve the organizational objectives. **Aim of the study:** Assess leadership behaviors and innovative work behaviors among nurses. **Subject and Method: Research design:** A descriptive design was utilized in this study. **Setting:** This study was conducted at Belbeis general hospital affiliated to ministry of health. **Subjects:** A convenient sample of 100 staff nurses was used in this study. **Tools of data collection:** two tools were used: Multifactor leadership behaviors questionnaire and innovative work behaviors questionnaire. **Results:** Indicated that 75% of staff nurses had a positive perception of the transformational leadership behavior. As well, 37 % of staff nurses had a high level of innovative work behaviors, while, 35% of them had a low level of innovative work behaviors. **Conclusion:** There was statistically significant and positive correlation between innovative work behaviors and all multifactor leadership behaviors. **Recommendations:** The nurse manager should respond positively to nurses' innovative efforts by supporting them with the time and resources to carry out, and plan to increase the participation of staff nurses in decision-making process to promote perception about leadership behaviors.

Key words: Innovative work behaviors, leadership behaviors, staff nurses

Introduction:

Nursing is a healthcare profession focused on the care of individuals, families, and communities, so nurses are considered as the central component of the healthcare sector in all parts of the world. Today's many challenges are facing health care organizations such as personnel diversity, national and international competition, development, innovations, new leadership and management approaches, commitment and globalization. So nursing leadership is a key skill for nurses at all levels, and there's increasing need for leadership that inspires followers to aspire for a common greater good in a supportive environment⁽¹⁾.

Leadership behaviors are the most prevalent factors that influence employees' attitudes and behaviors including organizational commitment

and provide direction to foster innovative work behaviors among nurses. Leadership can be defined as the process of working with individuals, groups, and other resources in order to achieve the objectives of the organization. As well, leadership behaviors can be defined as the behavior which a leader exhibits⁽²⁾. Moreover, Leadership is the process of influencing individuals and providing them with an atmosphere that helps them to accomplish team or organizational objectives and goals. Leadership occurs when one person induces others to willingly meet the minimum requirements for their job⁽³⁾⁽⁴⁾.

Additionally the leader is an important factor affecting the success or failure of the organization. Competent leaders can motivate, encourage and identify with their staff

to promote the completion of their jobs and the achievement of the required objectives⁽⁵⁾. Moreover, leaders use a wide range of different leadership behaviors to inspire and motivate staff nurses; general leadership behaviors are often split into transformational, transactional, and laissez-faire leadership⁽⁶⁾.

Transformational leadership is defined as influencing others by changing follower's values and demands to reach exceptional goals. Transformation leaders are often highly visible and known in all aspects of their work for their passion and energy. They spend most of their time communicating with others and seeking projects that add value to the future of their teams. This leadership behavior is divided into four dimensions are: idealized influence, individualized consideration, inspirational motivation and intellectual stimulation⁽⁷⁾.

Idealized influence refers to the ability of leaders to act as role models by creating a sense of appreciation, respect and trust in followers. This characteristic of transformational leaders tends to encourage employees to engage in innovative ways of carrying out their work.⁽⁸⁾ Intellectual stimulation, a feature that provides the opportunity of transformational leaders to raise consciousness and appreciation of followers, as well as their own beliefs, values and creativity; this helps to inspire workers to question conventions and to examine new and innovative ways of dealing with challenges⁽⁹⁾.

Individualized consideration, an attribute that encourages transformational leaders to pay attention to individual followers and taking into account their strengths and limitations, the leader constantly engages followers by coaching and providing them with input in a process that ensures that the desires of followers are in line with the purpose

of the organization such that opportunities are given for development and self-actualization⁽¹⁰⁾. Inspirational motivation, refer to the ability of leaders to inspire and motivate confidence and a sense of mission in employee, Strong communication skills support inspirational motivation in which the leader visualizes a desirable future, communicates a simple and appealing vision and then convincingly communicate the key priorities and improvements expected from the employee⁽¹¹⁾.

Transactional leadership is based on the premise of mutual relationship between leaders and employee. Transactional leaders seek a cost-benefit economic exchange with members as their material and psychological requirements are fulfilled to attain anticipated work performance. On the other hand, transactional leadership followers are required to agree with, embrace, and comply with the leader in order for praise, reward, and resources or to avoid punishment. As a result, this type of leadership limits the advancement of the innovative and creative abilities of employees and hinders personal and organizational growth⁽¹²⁾.

Additionally, transactional leadership has been used as a corrective approach, and has two dimensions: contingent reward; and management by exception (active and passive). Contingent reward indicates that to get the desired outcomes from the followers, the leader uses incentives and promotions. Contingent reward is seen as a constructive form of behavior based on a bargaining exchange mechanism in which the leader clarifies subordinate expectations and both agree on the accomplishment of organizational goals, and when goals are accomplished, the leader provides appreciation and rewards to subordinates⁽¹³⁾.

The laissez-faire leadership was described as avoidance and abdication of one's responsibilities. Generally, Laissez-faire leaders avoid decisions, ignore challenges in the workplace and fail to model suitable behaviors. This passive leadership behavior often indicates a lack of clarification about followers' roles and obligations, leading to discontent and disappointment. Laissez faire leaders' followers don't know what their authority is and what they are supposed to do ⁽¹⁵⁾.

Leadership behaviors play an important role in creating a positive work environment, enhancing job satisfaction, innovation and commitment ⁽¹⁶⁾. As well, Innovative work behavior can be seen as a motivational and cognitive process of the individual nurse or a group of nurses, expressed in certain activities. Nurses must be able to perform tasks that go beyond a team, group, or organization's established routines. They may search for new technologies, suggest new ways of achieving goals, apply new methods of working, and explore and secure resources for implementing new ideas. These actions are called innovative work behaviors, which can be defined as an individual's intentional introduction, promotion and realization of new ideas, products, processes, and procedures within a work role, work group or organization, in order to benefit role performance, the group, or the organization ⁽¹⁷⁾.

In the health sector, healthcare practitioners' innovative work behavior can occur in a gradual adjustment of current healthcare procedures, services or as entirely new practical alternatives. In order to engage in creative behavior, nurses need leadership, organizational commitment, resources and understanding the role of innovation. Nursing leadership is important for establishing and maintaining frameworks and conditions to promote

intensity and is therefore necessary for the innovation process. Additionally, leadership behaviors play an important role in creating a positive work environment that affects the degree of nurses' commitment and innovation ⁽¹⁸⁾

Significance of the study:

Over the last few years organizations have undergone dramatic changes, including flatter and looser buildings, downsizing and horizontal approaches to the flow of data, owing to fast technological innovations, global competition and the shifting nature of the workforce caused by measures such as total quality management and reengineering of business processes ⁽¹⁹⁾. The manager of any organization is considered a strategic factor that leads the organization to one of its duties towards its predetermined objectives. Nowadays, leadership behaviors are a very significant variable that enhances employee commitment and promote the employee innovation. Committed staffs are anticipated to conduct at a higher level of performance than uncommitted. Additionally, innovation in nursing not only contributes to improve healthcare quality, but also promotes medical productivity ⁽¹⁸⁾. Therefore, encouraging commitment and innovative work behavior among nurses has been an important development direction for healthcare organizations. Although, studies were conducted to study leadership behaviors but, no study was conducted to examine relationship leadership behaviors, organizational commitment, and innovative work behavior among nurses. So, the current research aims to determine the relation between leadership behaviors, and innovative work behavior among nurses at Belbeis general hospital.

Aim of the study :

The present study aimed to determine the relation between

leadership behaviors and innovative work behaviors among nurses at Belbeis general hospital.

Research questions:

1. What are the nurses' perceptions of leadership behaviors at Belbeis general hospital?
2. What is the level of nurses' innovative work behaviors at Belbeis general hospital?

Subjects and method

Study Design:

A descriptive correlation design was used for this study.

Study Setting:

This study was conducted at Belbeis general hospital affiliated to ministry of health.

Study Subjects:

A convenient sample of 100 staff nurses working at Belbeis general hospital at the time of data collection and agreed to participate in the present study.

Tools of data collections:

A questionnaire sheet was used to collect data for this study which was consisted of two tools.

Tool I: Modified multifactor leadership behaviors questionnaire:

This tool contained two parts as follows: **Part 1:** Personal and job characteristics of staff nurses, developed by the researchers to collect data about age, gender, years of experience, and educational qualification. **Part 2:** Developed by **Bass and Avolio** ⁽²⁰⁾ to measure nurses' perception of multifactor leadership behaviors. It included 21 items that are grouped into seven dimensions (each dimension includes three items); four dimensions represents transformational leadership (idealized influence, inspirational motivation, intellectual stimulation, & individual consideration), two

constructs for transactional leadership (contingent reward & management-by-exception), and one for laissez - faire leadership. The nurses' responses were measured on a five-point Likert scale ranging from always (5) to never (1). The total score of this tool ranging from 21-105. The nurse's score was considered a positive perception of each type of leadership behaviors if it is ≥ 63 ($\geq 60\%$) and a negative perception if it is < 63 ($< 60\%$). The reliability of the tool was measured by Cronbach alpha coefficient and it was 0.85.

Tool II: Modified Innovative Work Behavior Questionnaire:

It was developed by **Harby et al.** ⁽²¹⁾ to assess innovative work behaviors. It consisted of 47 leader behaviors subdivide into 10 dimensions, as follows: Innovative role modeling (4 items), support for innovation (12 items), stimulating knowledge diffusion (7 items), providing vision (5 items), consulting (5 items), task assignment and delegation (3 items), organizing feedback (2 items), rewarding (3 items), providing resources (3 items), and monitoring (3 items)The nurses' responses were measured on a five-point Likert scale ranging from strongly agrees (5) to strongly disagree (1). The total score of this tool ranging from 47-235.The scoring levels are arranging as follows; <146 ($< 65\%$) for low innovative work behavior, from $146 < 176$ ($65 < 75\%$) for moderate innovative work behavior, and ≥ 176 ($\geq 75\%$) for high innovative work behavior.

Fieldwork:

The field work of this study was executed in one month started from the middle of September to the middle of October, 2020. The researcher met staff nurses in each unit in the morning, afternoon, and night shifts after finishing their work to distribute

the questionnaires after clarifying the purpose of the study. Staff nurses completed the questionnaires at the same time of distribution and took about 20-30 minutes.

Pilot study:

A pilot study was carried out on 10 % of study subjects (10 staff nurses) to test applicability, feasibility, practicability of the tools. In addition, to estimate the time required for filling in the questionnaire sheets. The selected staff nurses were excluded from the main study sample and the necessary modifications were done according to the results of the pilot study.

Content validity:

The questionnaire was translated into Arabic; and then content and face validity were established by a panel of three experts at the faculty of nursing, Zagazig University, and two experts at the faculty of nursing, Mansoura University. Experts were requested to express their opinions and comments on the tool and provide any suggestions for any additions or omissions of items. According to their opinions all recommended modifications were performed by the researcher.

Administrative and ethical considerations:

Official permissions were obtained from the dean of the Faculty of Nursing, Zagazig University, and approval to conduct the study was obtained from the medical and nursing directors of the hospital and the head nurses of each department after explaining the nature of the study. An individual oral consent was received from each participant in the study after explaining the purpose of the study. Staff nurses were given an opportunity to refuse or to participate and they were assured that the information would be used confidentially and used for the research purpose only.

Confidentiality of the data was maintained.

Statistical analysis:

Data entry and statistical analysis were done using the statistical package for social science (SPSS) version 24.0. Quantitative data were expressed as the mean \pm SD & median (range), and qualitative data were expressed as absolute frequencies (number) and relative frequencies (percentage). Percent of categorical variables were compared using Chi-square test. Spearman's correlation coefficient was calculated to assess relationship between various study variables, + sign indicated direct correlation and - sign indicate inverse correlation, also values near to 1 indicated strong correlation and values near 0 indicate weak correlation. All tests were two sided. P-value $<$ 0.05 was considered statistically significant (S), and p-value \geq 0.05 was considered statistically insignificant (NS).

Results:

Table 1 shows personal and job characteristics of staff nurses. According to the table, 52% of staff nurses aged 30 years old or more with a mean age 30.8 ± 6 . As well, the majorities of them were female and married (92% and 93%, respectively). As regards nurses educational level, 41% of them had bachelor degree of nursing. Additionally, more than half of them had less than 10 years of experience. About two-thirds of the study subjects worked in ICU and emergency units (57% and 64%, respectively). Moreover, 82% of staff nurses attended training courses.

Figure 1 illustrates the perception of multifactor leadership behaviors among staff nurses. This figure presents that 75% of staff nurses had a positive perception of the transformational leadership behavior. On the other hand, 78% and 54% of them had negative perceptions of

laissez-faire leadership behavior and transactional leadership behavior, respectively.

Figure 2 presents the level of innovative work behaviors among staff nurses. It is clear from this figure that 37 % of staff nurses had a high level of innovative work behaviors, while, 35% of them had a low level of innovative work behaviors.

Table 2 clarifies the correlations between the study variables as reported by staff nurses. This table displays that there was statistically significant and moderate positive correlation between innovative work behaviors and all multifactor leadership behaviors, where p-value, < 0.05.

Table 3 show relation between personal job characteristics of staff nurses and leadership behaviors, the table, represents that there were no statistically significant relationships between nurses' personal and job characteristics as regards their perception of transformational and transactional leadership behaviors, where p-value >0.05. As well, there were statistically significant relationships between nurses' perception of laissez-faire leadership behavior as regards their age, gender, marital status, educational level and years of experience, where p-value <0.05.

Table 4 shows the relation between personal job characteristics of staff nurses and innovative work behaviors, this table illustrate that there were statistically significant relationships between staff nurses' innovative work behaviors level as regards their educational level and attending training course, where p-value < 0.05.

Discussion:

Leadership behaviors have often been seen as a vital element and feature of management that influence

the level of commitment of employees within the organization and have the possibility to boost organization effectiveness, innovative work behaviors among staff nurses, job satisfaction, as well as a sense of confidence about problem solving in order to achieve the organizational objectives Abasilim, et al ⁽²²⁾. Therefore, the aim of this study was to determine the relation between leadership behaviors and innovative work behaviors among nurses at Belbeis general hospital.

Regarding the perceptions of leadership behaviors; the present study findings showed that the highest percentage of staff nurses had a positive perception of the transformational leadership behavior. This finding might be due to that staff nurses choose to work with a leader using this style of leadership behaviors that includes pure vision, commitment to excellence, loyal to their staff nurses, willingness to inspire, communicate, and lead others to greater accomplishment. They also foster innovation and stress the value of appreciating and valuing staff nurses. These will push new standards of service and sustainability to high quality performance, safer working conditions for nurses, and secure patient-centered care. The current study finding is in agreement with previous studies, such as the study conducted by Olu-Abiodun & Abiodun ⁽²³⁾, who studied the perception of transformational leadership behavior among nurses, in Nigeria; and another one conducted by Majeed, et al ⁽²⁴⁾, who explored the relationship between transformational leadership and organizational citizenship behavior, in Malaysia, and they found that nurses had a positive perception about transformational leadership behavior. As well, Afsar & Umrani ⁽²⁵⁾, who investigated the effect of transformational leadership on employee's innovative work behaviors, in Pakistan, and revealed that nurses

had a positive perception about transformational leadership behavior.

Regarding the level of innovative work behaviors; this study findings showed that slightly more than one third of staff nurses had a high level of innovative work behaviors. The potential explanation for this result may be attributed to the fact that the innovation behavior is comparatively new and unfamiliar concept for nurse managers; so they didn't interested in enhancing these behaviors in their units. The current study findings go in the same line with that of a study conducted by ⁽¹⁸⁾, who examined the relationship between leadership behaviors, organizational climate, and innovative work behaviors among nurses, in Egypt, and revealed that slightly less than half of them have a high average level of innovative work behaviors. Conversely, the previous result goes in disagreement with that of a study conducted by Kamel& Aref ⁽²⁶⁾, who investigated the perception of staff nurses about organizational culture and its relationship to innovative work behaviors at critical care units, in Egypt, and pointed out that half of staff nurses had a highly level of innovative work behaviors. Additionally, Abd El-Fattah ⁽²⁷⁾, who conducted a study about innovation behaviors levels and its relation with TIGER-based nursing informatics competencies among critical care nurses, in Egypt, confirmed that more than half of participants had a moderate level of innovative work behaviors.

With regard to the correlations between the study variables; the present study findings revealed that there was statistically significant and positive correlation between innovative work behaviors and all multifactor leadership behaviors. The previous study results might be due to that leadership behaviors consider the important aspect that contributes to the staff nurses' innovative work behaviors. Additionally, leaders of

transformational leadership behavior able to motivate staff to perform beyond their expectations by mean of purposeful tasks inspire hard work, share vision and simply express objectives and priorities. As well, encourages the adoption and implementation of new ideas with decentralization. Moreover, they enhance and provide staff with more decision-making autonomy in all actions related to tasks they perform and support new activities that could positively affected staff nurses' innovative work behaviors. The previous study findings go in the same line with Ismail& Mydin ⁽²⁸⁾, who examined how nurse managers' transformational leadership behavior relates to innovative work behaviors of subordinate nurses, in Pakistan, and revealed that transformational leadership has the strongest positive relationship with innovative work behaviors. As well as, Afsar& Masood ⁽²⁹⁾, who studied the influence of transformational leadership behavior on the employees' innovative work behaviors, in Afghanistan, and revealed that transformational leadership behavior completely influenced innovative work behaviors.

Regarding the relationship between studied nurses' personal and job characteristics as regards the different study variables; there were no statistically significant relationships between staff nurses' perception of transformational and transactional leadership behaviors as regards their personal and job characteristics. These results might be due to that there were other factors that affect nurses' perception of transformational and transactional leadership behaviors such as the organizational rules, policies, regulation, job satisfaction, nurse manger' personality, salaries, and work requirements. These results are supported by a study conducted by Muzafary, et al ⁽³⁰⁾, who studied organizational justice, organizational citizenship behavior and turnover

intention among nurses: The mediating effect of transformational leadership, in Egypt, and they detected that there were no statistically significant relationships between nurses' personal and job characteristics as regards the transformational leadership. Likewise, Olu-Abiodun & Abiodun⁽²³⁾ reported that there were no statistically significant relationships between staff nurses' perception of transactional leadership behaviors as regards their personal and job characteristics.

As well, the current study results showed that there were statistically significant relationships between staff nurses' perception of laissez-faire leadership behavior as regards their age, gender, marital status, educational level and years of experience. These results might be due to that this hospital had a centralized decision making process that could affect negatively on older and more experienced nurses. Additionally, female nurses specially who are married used to take orders from others and didn't participate in the decision making process. As well, staff nurses who had diploma and specialty of nursing may not have the suitable training and maturation to take their decisions alone without head nurses; as a result they had negative perception about laissez-faire leadership behavior. These results are in consistent with Metwally, et al⁽³¹⁾, who investigated the relationship between leadership style and organizational commitment among staff nursing in kingdom of Saudi Arabia, and Ahmed, et al⁽¹⁸⁾ and they revealed that there was a statistically significant relationship between nurses' perception of laissez-faire leadership behavior as regards their educational level and years of experience.

Moreover, the present study findings demonstrated that there were statistically significant relationships between nurses' level of innovative

work behaviors as regards their educational level and attending training course. The possible clarification for these results could be related to that the ability to create innovative solutions is dependent on the knowledge, training, and education of nurses to apply that knowledge in solving the new problems and generating new ideas. These results are in accordance with the findings of previous studies, as the one conducted by Sepahvand, et al.⁽³²⁾, who examined the innovative behaviors of hospital based registered nurses, in California, and another one conducted by Jose, et al.⁽³³⁾, who investigated the relationship between work satisfaction, work engagement, burnout and innovative work behaviors, in Greece, and they found that there was a strong correlation between nurses' educational level and their level of innovative work behaviors.

Conclusion:

In the light of the main study results; it can be concluded that three quarters of studied nurses had a positive perception of the transformational leadership behavior. While, more than three quarters of them had a negative perception of the laissez - faire leadership behavior. Additionally, slightly more than one third of studied staff nurses had a high level of innovative work behaviors. Moreover, there was significant and positive correlation between innovative work behaviors and all multifactor leadership behaviors.

Recommendations:

Based on the results of this study the following are recommended:

The nurse manager should:

- Use leadership styles that make it easy for nurses to communicate their perspectives and share the organization's expectations.
- Foster and encourage innovation

- as a work necessity and include innovation-related training opportunities in nursing.
- Respond positively to nurses' innovative efforts by supporting them with the time and resources to carry out.
 - Plan to increase the participation of staff nurses in decision-making process to promote their perception about leadership behaviors.
 - Explain staff nurses' rights, responsibilities and how to deal with their problems during the orientation period to promote perception about leadership behaviors.
 - Further research: A training program should be arranged to assess the effect of innovation in nursing on staff nurses' emotional intelligence, empowerment and performance

Table 1: Personal and job characteristics of staff nurses (n=100)

Items	No	%
Age per years:		
<30	48	48.0
≥30	52	52.0
Mean± SD	30.8±6	
Gender :		
Male	8	8.0
Female	92	92.0
Marital status:		
Married	93	93.0
Single	7	7.0
Educational level:		
Bachelor degree of nursing	41	41.0
Diploma of nursing	38	38.0
Specialty of nursing	21	21.0
Years of experience:		
<10	57	57.0
≥10	43	43.0
Mean± SD	9.6±6.3	
Department:		
Surgical units	15	15.0
Internal medical units ICU and emergency units	21	21.0
	64	64.0
Attended training courses		
yes	82	82.0
no	18	18.0

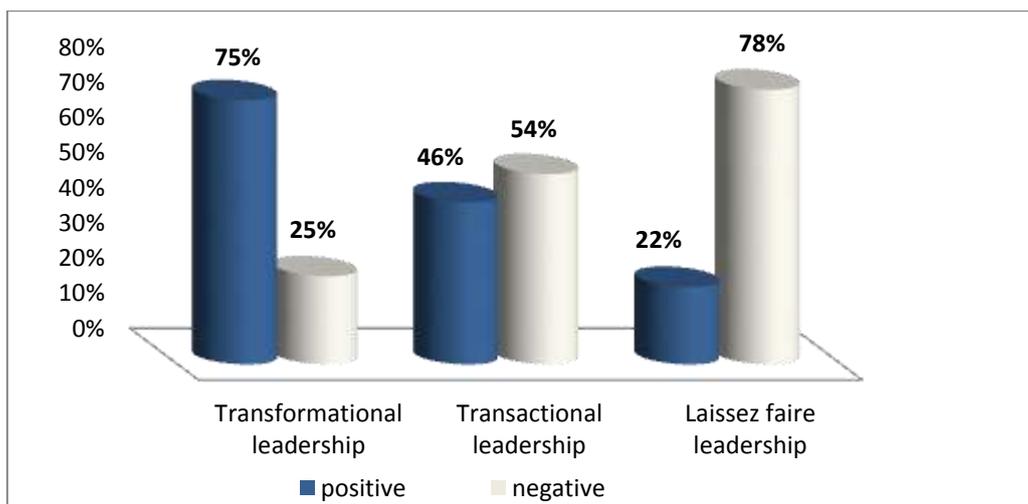


Figure 1: Perception level of multifactor leadership behaviors among staff nurses (n=100)

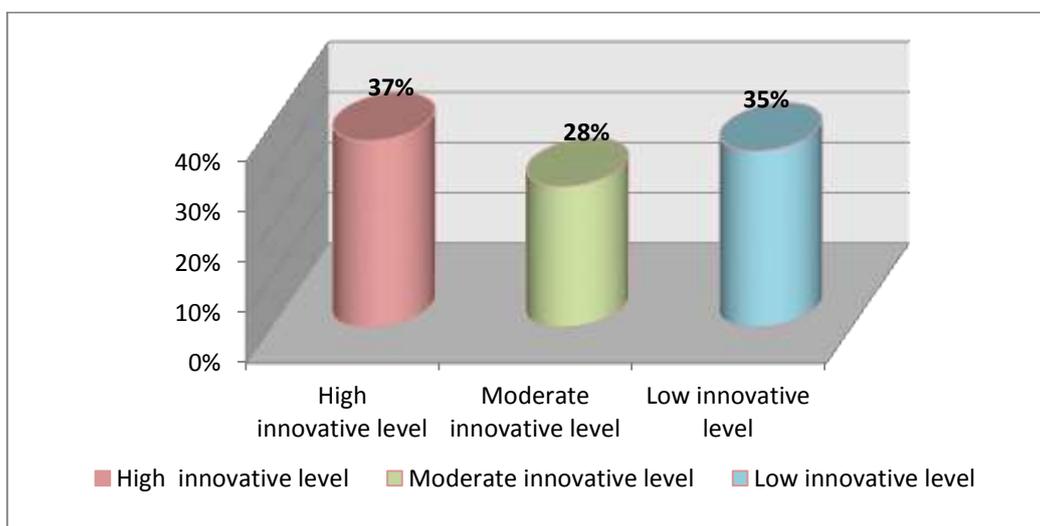


Figure (2): Level of innovative work behaviors among staff nurses (n=100)

Table 2: Correlation matrix between the study variables as reported by staff nurses (n=100)

Variables	Multifactor leadership behaviors					
	Transformational Leadership		Transactional leadership		Laissez - fair leadership	
	r	p	r	p	r	p
Innovative work behaviors	0.653**	0.0001	0.585**	0.0001	0.332**	0.001

**Significant at p<0.05 (r) Correlation coefficient

Table 3: Relationship between personal and job characteristics of the staff nurses and leadership behaviors (n=100)

Variables	Leadership behaviors											
	Transformational leadership				Transactional leadership				Laissez-faire leadership			
	Positive perceptio n		Negative perception		Positive perceptio n		Negative perceptio n		Positive perceptio n		Negative perception	
	No	%	No	%	No	%	No	%	No	%	No	%
Age per years												
<30	36	75.0	12	25.0	22	45.8	26	54.				
≥30	39	75.0	13	25.0	24	46.2	28	53.8	15	31.3	33	68.7
									7	13.5	45	86.5
P-value	1				0.97				0.032(S)			
Gender												
Male	7	87.5						50.				
Female	68	73.9	1	12.5	4	50.0	4	0	5	62.5	3	37.5
			24	26.1	42	45.7	50	54.3	17	18.5	75	81.5
P-value	0.67				0.99				0.012(S)			
Marital status												
Married								55.				
Single	70	75.3	23	24.7	41	44.1	52	9	18	19.4	75	80.6
	5	71.4	2	28.6	5	71.4	2	28.6	4	57.1	3	42.9
P-value	0.99				0.24				0.04(S)			
Educational level												
Bachelor degree of nursing								58.				
Technical institute of nursing	30	73.2	11	26.8	17	41.5	24	5	7	17.1	34	82.9
Diploma and specialty of nursing	32	84.2	6	15.8	21	55.3	17	44.	14	36.8	24	63.2
	13	61.9	8	38.1	8	38.1	13	7	1	4.8	20	95.2
								61.				
								9				
P-value	0.16				0.34				0.01(S)			
years of experience												
<10								52.				
≥10	42	73.7	15	26.3	27	47.4	30	6	18	31.6	39	68.4
	33	76.7	10	23.3	19	44.2	24	55.8	4	9.3	39	90.7
P-value	0.73				0.75				0.008(S)			
Department												
Surgical units				.0				26.				
Internal medical units	15	100.	0	28.	11	73.3	4	7	4	26.7	11	73.3
ICU and emergency units	5	71.4	6	6	8	38.1	13	61.	2	9.5	19	90.5
	45	70.3	19	29.7	27	42.2	37	9	16	25.0	48	75.0
				7				57.				

		8										
P-value		0.053				0.07				0.3		
Attended training courses												
yes		75.		25.				53.				
no	63	0	21	0	39	46.4	45	6	18	21.4	66	78.6
	12	75.	4	25.	7	43.8	9	56.	4	25.0	12	75.0
		0		0				3				
P-value		1				0.84				0.75		

(s)= Significant P<0.05

Table 4: Relationship between personal and job characteristics of the staff nurses and innovative work behaviors (n=100)

Variables	Innovative work behaviors						
	High level		Moderate level		Low level		
	No	%	No	%	No	%	
Age per years							
<30		39.		27.			
≥30	19	6	13	1	16	33.3	
	18	34.	15	28.	19	36.6	
		6		8			
P-value		0.87					
Gender							
Male		62.		37.			
Female	5	5	3	5	0	0.00	
	32	34.	25	27.	35	38.0	
		8		2			
P-value		0.09					
Marital status							
Married		36.		28.			
Single	34	6	26	0	33	35.4	
	3	42.	2	28.	2	28.57	
		9		6			
P-value		0.92					
Educational level							
Bachelor degree of nursing		39.		12.			
Technical institute of nursing		0	5	2	20	48.8	
Diploma and specialty of nursing	16	42.	14	36.	8	21.1	
	16	1	9	8	7	33.3	
	5	23.		42.			
		8		9			
P-value		0.017(S)					
years of experience							
<10		36.		21.			
≥10	21	8	12	1	24	42.1	
	16	37.	16	37.	11	25.6	
		2		2			
P-value		0.12					
Department							
Surgical units		53.		40.			
Internal medical units	8	3	6	0	1	6.7	
ICU and emergency units	7	33.	8	38.	6	28.6	
	22	3	14	1	28	43.7	

		34.		21.		
		4		9		
	P-value			0.07		
Attended training courses						
yes		42.		23.		
no	35	7	19	2	28	34.1
	2	11.	9	50.	7	38.9
		1		0		
	P-value			0.02(S)		

(s)= Significant P<0.05

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