

The Influence of Nurse Managers' Leadership Practices and Organizational Characteristics on Staff Nurses' Innovation: A Comparative Study

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Abstract:

Background: Noteworthy, Nurse Managers have a key contribution for staff nurses' performance. Among the most crucial nurse managers' leadership practices is to construct an environment that upholds nurses' creativity, since their innovation behaviors is essential to provide get better health care. **Aim** of this study was to compare the influence of nurse managers' leadership practice and, organizational characteristics on staff nurses' innovation behavior at EL-Mogamaa EL-Tepee Hospital and Sidi-Salem Hospital.

Method: Descriptive, comparative through cross-sectional study design was adopted. The study was conducted at EL-Mogamaa EL-Tepee Hospital affiliated to Health Insurance and Sidi-Salem Hospital affiliated to Ministry of Health and Population. All available staff nurses working at EL-Mogamaa EL-Tepee Hospital (n=148) and Sidi-Salem Hospital (n=200) was included in this study. Structured questionnaire sheet was used to collect data regarding staff nurses' characteristics data; leadership practices inventory to measure nurse managers' leadership practices; Corporate Entrepreneurship Assessment Inventory to assess work environment characteristics; and staff nurses' innovation behavior.

Results: Staff nurses' viewed their nurse managers' five leadership practices as a high frequency at EL-Mogamaa El-Tepy Hospital, while medium level at Sidi-Salem Hospital with the emphasize on enabling others to act behavior. At EL-Mogamaa El-Tepy Hospital, staff nurses perceived management support as the highest organizational characteristics compared to work discretion at Sidi-Salem Hospital. Staff nurses' innovative behavior at EL-Mogamaa El-Tepy Hospital was higher than Sidi-Salem Hospital. Staff nurses' innovation behavior had statistically significant favorable correlations with their years of experience in the current position, age, all organizational characteristics, creative efficacy, and proactivity at both hospitals.

Conclusion: There were significant influences of nurse managers' leadership practices, staff nurses' personal and organizational characteristics on their innovative behavior. **Thus**, building constructive work practice environment with supportive management, promoting thinking with offering time and freedom, and motivating good performance to enhance for staff nurses' innovative behaviors are necessary.

Keywords; Innovation Behavior, Leadership Practices, Organizational Characteristics

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I. Introduction

Healthcare organizations put extensive dependence on nurses' work. Nursing work becomes more and more challenged as a result of the lacking in patients' care and rising international public awareness (**Francis, 2013; Levinson, 2013**). Nurses are recognized as leaders in patient care. Nursing includes the implementation of goal-based interventions which focused on improving patients' conditions or comfort, as well as, coordinate and inspire care teams to assist patients' well-being (**James, 2010**). Proficient innovative nurses, with teamwork, and decision-making abilities are now required because of initiating new technologies in nursing practice. Predominating, the solution displayed is to reinforce nursing leader to be at the vanguard of care. Leadership is an essential part of powerful nursing care. Thus, leadership is the appropriate skill needed to accomplish team members' goals and organizational labor (**Dall'Agnol, et al., 2013; James, 2010**).

Leadership deemed as having the ability to influence interpersonally in a given situation to accomplish one or more goals; nursing leaders had been taken as a change agent who could create concord cohesiveness and positively have an impact on organizational success via their conduct behaviors and leadership practices (**Wong, et al., 2013**). Existing nurse leader's practices portray the present work unit relations, penalty, incentive, feedback, and rewards (**Registered Nurses' Association of Ontario, 2013**). Leadership practices are "the processes by which individuals influence others to achieve a common goal" (**Northouse, 2004**). Nursing leadership practices have a great effect on nurses' performance, nursing work environment, patient care quality,

the nursing utilization of evidence-based research and their ongoing professional development (**Casida & Parker, 2011; Schwart, et al. 2011; Cummings, et al. 2010**). Sequentially, nursing leadership practices can influence nurses' inspirations and this consecutively can positively or negatively affect patients' and hospitals' outcomes (**Casida & Parker 2011; Schwart et al. 2011; Brady Germain & Cummings 2010**).

The Five Practices of ideal Leadership Framework recognizes exact and measurable leadership practices behaviors. These practices enable nurse managers to fulfill extraordinary outcomes, transform staff and organizations into positions they have eternally been attained before. Leadership practices include; first, challenge the process that looks for opportunities for change by snatching the initiative and searching outer the box for creative thinking, and being a risk taker by regularly achieving small success and learning from experience to improve the process; second, inspire a shared vision is a leadership practice of predicted the future by portraying and enabling potentials, committing others to a shared vision and, engaging them in a common purpose (**Kouzes and Posner, 2012, 2001**).

Third leadership practice is, model the way that clarifies the nurses' manager behavior of finding their voice and assuring shared standards; and setting an example by supporting actions with common values; fourth, enable others to act behavior which reveals the ability of collaboration by establishing trustful relationships; providing support by sharing information and resources; and sustaining others by improving their skills; finally, encourage the heart involves being aware of the others' contributions by appreciating individual's excellence; and celebrating the success by building a spirit of social support (**Kouzes and Posner, 2012, 2001**). One of nursing leadership's most important responsibilities is to build a work environment that supports and enhances nurses' innovative behavior (**Knol & van Linge, 2008**).

Currently, innovative nurses and their managers are precious assets to any healthcare organization, because of delivering health care outcomes are becoming increasingly complex and there is a continuous and multifaceted change in the clinical, technical, and managerial processes and therefore this is both a nursing contest and an opportunity (**Registered Nurses' Association of Ontario, 2013**). Healthcare organizations that would like to stay competitive and viable need to pay thorough attention to build an environment beneficial for the progress and implementation of valuable and constructive ideas of their staff. From the preceding, it is obvious that innovation is of top notch significance to the survival of any agency. Healthcare organization therefore have to deliver attention to all those domains which are of direct and crucial importance to develop possibilities wherein the organizations' staff can appropriately understand as positive to their potential to innovate (**Obiora & Okpu, 2015**).

Innovative staff nurses are frequently at the vanguard of any plans to enhance safety and excellence in health care structures. Also, they have to be able to adapt and apply powerful communication, including the ability to persuade the others towards a shared goal (**Australian College of Nursing, 2015**). As well as, nurses interrelate and communicate with their patients lots of time, evaluate their needs, and solve their problems. Further, they perform nursing duties, make cooperation with healthcare providers. To do this successfully, staff nurses need efficiency and innovation. Fostering innovation behaviors among staff nurses is fundamental means of improving health care (**Baumann, 2011**).

Innovation is to an oversized extent considered a social and communicative method, and input from people probably improves the creation of novel and precious ideas additionally within the in the early period of idea production and development (**Bergendahl & Magnusson, 2015**). Typically, innovation is outlined as a brand new technique and/or practice instrument (**Mcsherry & Douglas, 2011**). Based on International Council of Nurses (**ICN**) (**2009**), innovation is that the tactic of emergent of new approaches, technologies and manners of functioning. The National Health Service (**NHS**) (**2011**) Institute for Innovation and Improvement affirms innovation is regarding doing things otherwise or doing varied things to induce giant gains in performance. Innovative behavior can be explained as the style of simplifying new problem solving ideas inside organizational practice. Just put, it is getting two of things that already present and placed them together in a novel way. Innovative behavior can be explained as the process of facilitate novel problem solving ideas into organizational practice. Simply put, it is taking two things that already exist and putting them together in a new way (**Brysiewicz, et al., 2015**).

Staff nurses' innovative behavior has become an extremely significant basis for the development of nursing performance and organizational achievement. Their innovation behavior is important for increasing nursing care quality, improving nursing practices conditions, and help in attracting new groups to health care (**Apekey et al. 2011; Ross et al. 2011; Lachman, et al., 2009**). However, this is extremely tricky to accomplish inside a structure that does not support, nurture and encourage it (**Brysiewicz, et al., 2015**). **Joseph (2015)** depicted five prerequisites for innovation inside any organization namely; organizational values including the vision and mission that encouraging innovation; workplace relationships is the degree to which organization strive to build work relationships; organizational identification reflects how do members within the organization describe themselves; organizational support indicates the organization's value and care for the employees; and relational leadership includes the role and style of leadership to enhance members' innovation.

Conversely, staff nurses' innovation is an essential measure for addressing some present health care problems. Since, there is an accelerated competition and rapidity changes in the healthcare marketplace; contest of cost containment; contests of work practice environment and nursing development; aggravating nurse shortage will rise in the future, therefore, it requires a profound examination for the nature of innovation (**Tung et al., 2014; Lachman et al., 2009**). Recently in most of the health organizations, staff nurses' innovation still at a low level for many causes (**Tung et al., 2014**). Few nurses engage in innovation, because they have lack of self-confidence, have negative perceptions and/or inadequate innovation knowledge and skills; they were traditionally perceived themselves as physicians' assistants in care for patients and further, in daily work, they often only carry out routine procedures as vital signs because they have insufficient nursing professional knowledge (**Tam, 2007**). Accordingly, staff nurses have not adequate authority to perform tasks effectively such as complicated nursing processes, and innovation behavior (**Muc, 2009**).

There are many factors contributed to staff nurses' innovation behavior including; individual and organizational characteristics. Two perceived individual factors has declared to enhance staff nurses' innovation when faced with the opportunity of innovation in their workplace namely; proactivity which defined as the nurses' relatively steady way when take action to impact their environment and produce change; and creative efficacy refers to the nurses' self-perception about their capability to be creative (**Baumann, 2011; Amo, 2006b**).

While, the most significant organizational characteristics that have an influence on staff nurses' innovation include; management support that is the willing to aid and reinforce innovative behavior including the advocating for innovative ideas and offering the needed resources to carry out action; work discretion is managers' obligation to endure failure, provide freedom in decision-making or extreme monitoring, and to delegate authority and responsibility; rewards regards the development and employing systems that reward rooted in performance, emphasize important successes, and support persistence of challenging work; and time availability is the estimate workloads to make certain that nurses have the needed time to follow innovation along with that their work are prepared in ways that maintain efforts to attain organizational goals (**Baumann, 2011; Amo, 2005b; Janssen, 2005**).

Grasping the importance and nature of innovation, and how can staff nurses follow change innovatively need to be disseminated in a healthcare organization. Staff nurses need to establish and support a climate for innovation, as well as, teaching strategies that integrate clinical and theoretical information for the success in generating an innovative solution for healthcare problems is needed (**Lachman, et al., 2009**).

Significance of the problem

Innovation is a complicated process; however, it is a crucial effort for health care (**Tung, et al., 2014**). To enhance patient safety and quality care; it doesn't and can not occur in isolation. It necessitates investment, support and allocation of the resource from managers and hospital administrations (**Mcsherry & Douglas, 2011**). Innovative nurse managers are an essential for the nursing advancement, implementing and preserving of that high-quality care (**Apekey, et al. 2011, Ross, et al. 2011**). It is greatly supposed that nursing leaders have the ability and power to support innovation (**Kitson, et al. 2011**). So, to involve staff nurses in innovative behavior, they require management support, enough resources, caring work environment, as well as, appropriate knowledge about their role and innovation. Also, construct an innovative culture that enhances nurses' responsibility toward innovation to face healthcare imperative challenges (**Tung et al., 2014**).

I.1.Aim of the Study

This study aimed to compare the influence of staff nurses' perceived nurse managers' leadership practices and organizational characteristics on their innovation behavior at EL-Mogamaa EL-Tepee Hospital and Sidi-Salem Hospital.

I.2.Research Questions

1. What are the nurse managers' leadership practices among staff nurses at EL-Mogamaa EL-Tepee Hospital and Sidi-Salem Hospital?
2. What are staff nurses' perceived organizational characteristics at EL-Mogamaa EL-Tepee Hospital and Sidi-Salem Hospital?
3. What is the influence of staff nurses' perceived nurse managers' leadership practices and organizational characteristics on their innovation behavior at EL-Mogamaa EL-Tepee Hospital and Sidi-Salem Hospital?

II. Subjects and method

II.1. Subjects

Research Design

A descriptive, comparative through cross-sectional design was operated for this study.

Setting

The study was conducted at two hospitals; EL-Mogamaa EL-Tepee Hospital at Tanta city affiliated to Health Insurance and Sidi-Salem Hospital affiliated to Ministry of Health and Population.

Subjects

The subjects included all available staff nurses working in preceding settings at EL-Mogamaa EL-Tepee Hospital (n=148) and Sidi-Salem Hospital (n=200). Nurse supervisors, novice nurses (with < 6 months of experiences and outpatient units' nurses) were excluded from the study.

Tool of the study: the researcher prepared a structured questionnaire to collect data of this study. It consisted of four parts as follow;

Part one; was organized to collect data about **staff nurses' characteristics** as age, years of experience in the current position, years of experience in hospital, qualification, marital status, and additional two personal characteristics namely: creative efficacy and proactively, using Creative Efficacy Scale (3 items) by **Tierney and farmer (2002)** and the proactivity scale (10 items) based on **Parker and Colli (2010); Williams, (2010); Searle, (2011)** their answers on these two scales evaluated on a 5-points scale from 5 (strongly agree) to 1 (strongly disagree). The higher staff nurses reported scores, the higher levels of creative efficacy and having proactivity.

Part two; included Leadership Practices Inventory (LPI) by **Kouzes & Posner (2001, 2012)** to collect staff nurses' perceived nurse managers' leadership practices data. It consisted of 30 items divided into; modeling the way, inspiring a shared vision, challenging the process, enabling others to act, and encouraging the heart (each of them with 6 items). Responses of staff nurses were rating using 10-points scaling ranging from 10= 'Very Frequently' to 1= 'Seldom or rarely'. The higher reported scores indicated the more frequent nurse managers' leadership practices (**according to table, A**).

Table (A): Kouzes and Posner's Leadership Practices Percentile Rankings (2001)

Leadership Practice	High frequency	Medium frequency	Low frequency
	M (Percentile)	M (Percentile)	M (Percentile)
Challenge the process	49 – 60 (70 – 100%)	41– 48 (30 – 69%)	12 – 40 (1 – 29%)
Inspire a shared vision	48 – 60 (70 – 100%)	37 – 47 (30 – 69%)	10 – 36 (1 – 29%)
Model the way	52 – 60 (70 – 100%)	44 – 51 (30 – 69%)	16 – 43 (1 – 29%)
Encourage the heart	51 – 60 (70 – 100%)	41 – 50 (30 – 69%)	11 – 40 (1 – 29%)
Enable others to act	53 – 50 (70 – 100%)	45 – 52 (30 – 69%)	16 – 44 (1 – 29%)

Part three; included the **Corporate Entrepreneurship Assessment Inventory (CEAI)** for healthcare was used to assess staff nurses' perceptions regarding their work environment characteristics. It developed by **Hornsby, et al., (2008)**. It contained four subscales; work discretion (7 items), management support (5 items), rewards/reinforcement (3 items), and time availability (5 items) with two negatively items. Responses of staff nurses were on a 5-points scaling from 5 (strongly agree) to 1 (strongly disagree).

Part four; contained **staff nurses' innovation behavior** scale by **Amo (2005a) and Janssen (2005)** was applied to determine staff nurses' innovation behavior. A 5-points scaling (ranging from 1=very little to 5=very large) was utilized to quantify staff nurses' responses.

II.2. Method:

Validity and Reliability

The tool of the study was translated into Arabic and its validity was assessed by five experts from the field of specialty. Based on their opinion, necessary modifications were done. Tool's individual items were checked by the experts for its relevance and appropriateness. The internal consistency (using Cronbach's alpha coefficients) was for the creative self-efficacy=0.83 and proactivity =0.87; for LPI (modeling the way=.88, inspiring a shared vision=.89, challenging the process=.86, enabling others to act=.91, and encouraging the heart=.93; for management support=0.76, work discretion=0.92, rewards/reinforcement=0.81, time availability=0.78; and for staff nurses' innovation behavior scale was 0.91.

Pilot study

A pilot study was conducted on 10% (n= 35) of staff nurses whose selected randomly from the above-mentioned hospitals (excluded from the study subject), to recognize the complexities and problems that may encounter during data collection and to estimate the required time.

Fieldwork

To collect the data, a semi-structured interview was applied. The researcher fully explained the aim, nature, and significance of the study for every eligible staff nurse to obtain their acceptance to participate in the study and to the hospitals' management to get better cooperation during the study. The questionnaire was completed by staff nurses during their work shifts. Once the questionnaire was finished, it was collected. To fill the questionnaire, staff nurses need about 20-30 minutes. The data was collected in a period of three months.

Ethical considerations

Approval of the study was taken from authorities' bodies. The purpose of the study was explained to the staff nurses. Staff nurses' informed consent to share in the current study was attained. Their anonymity and confidentiality of the information were preserved and; their voluntary participation and right to withdrawal were assured.

Statistical Analysis

To analyze the collected data, Social Sciences (SPSS) software version 19 was applied. **1) Descriptive statistics:** range, mean, and standard deviation were exploited for quantitative data **and;** number and percentage were employed for qualitative categorical data. **2) Inferential statistics:** An independent sample t-test was used to estimate differences in two groups' means. Pearson's R was used to verify the correlation. Significance level is considered at $P \leq 0.05$.

III. Results

Table (1): Distribution of staff nurses according to their personal data

Staff nurses' personal data	El-Mogamaa El-Tepy Hospital (n=148)		Sidi- Salem Hospital (n= 200)	
	n	%	n	%
Age				
• 20-30	73	49.3	160	80
• 30-40	48	32.4	40	20
• > 40	21	14.2	0	0.0
Mean ±SD (Range)	32.55 ± 8.61 (35)		27.43±4.19 (20.0)	
Years of experience in hospital				
• 1-10	109	73.6	155	77.5
• 10-20	26	17.6	45	22.5
• > 20	13	8.8	0	0.00
Mean ±SD (Range)	9.07±7.18 (36)		6.95±4.51 (19)	
Years of experience in current position				
• 1-10	76	51.4	162	81
• 10-20	47	31.7	35	17.5
• > 20	25	16.9	3	1.5
Mean ±SD (Range)	12.081±9.2578 (36.0)		6.57±4.65 (20.0)	
Marital status				
• Single	20	6.7	43	21.5
• Married	120	40.0	141	70.5
• Widow	8	2.7	16	8.0
Qualification				
• Diploma in nursing	86	58.1	155	77.5
• Technical Institute of nursing	33	22.3	37	18.5
• Batcher of nursing	29	19.6	8	4.0

Table (1) shows the distribution of staff nurses according to their personal data. As regard to staff nurses' age, nearly one half (49.3%) of them who working at El-Mogamaa El-Tepy Hospital had from 20 to 30 years old compared to 80% of staff nurses at Sidi- Salem Hospital with mean scores 32.55 ± 8.61 and 27.43 ± 4.19 , respectively. The majority (73.6%, 77.5%), while, 51.4% and 81% of staff nurses at El-Mogamaa El-Tepy and Sidi- Salem Hospitals had from 1 to 10 years of experience in hospital and in the current position, respectively. Two-fifths (40.0%) of staff nurses at El-Mogamaa El-Tepy Hospital compared to more than two-thirds (70.5%) at Sidi- Salem Hospital was married. As regard to qualification, more than half (58.1%) of staff nurses at El-Mogamaa El-Tepy Hospital compared to more than three quarter (77.5%) of them at Sidi- Salem Hospital had Diploma in nursing

Table (2): Mean percent, mean and standard deviation values of nurse managers' leadership practices as perceived by staff nurses at El-Mogamaa El-Tepy and Sidi- Salem Hospitals

Leadership Subscales	Practice Inventory	El-Mogamaa El-Tepy Hospital (n=148)		Sidi-Salem Hospital (n= 200)		t-test P
		Mean %	Mean ± SD	Mean %	Mean ± SD	
Model the way		77.0	46.20± 6.07	59.9	35.92± 5.14	84.248 (0.000*)
Inspire a shared vision		76.1	44.16± 6.10	59.6	35.8±4.87	69.017 (0.000*)
Challenge the process		77.7	46.62±6.92	60.8	36.46±5.72	67.691 (0.000*)
Enable others to act		80.7	48.40±6.49	63.4	38.06±6.09	72.330 (0.000*)
Encourage the heart		80.2	48.12±6.39	61.0	36.58±5.08	86.317 (0.000*)
Total leadership practice score		78.4	46.93±6.79	60.9	36.56±5.37	82.150 (0.000*)

* Significant at 0.05.

Table (2) illustrates mean percent, mean and standard deviation values of nurse managers' leadership practices as perceived by staff nurses. It noticed that there was a statistically significant difference between staff nurses' perceived nurse managers' leadership practices behavior at El-Mogamaa El-Tepy and Sidi- Salem Hospitals. As a general, staff nurses' perceived their nurses managers' leadership practices was high frequency (78.4%) at El-Mogamaa El-Tepy Hospital, while demonstrated as medium level (60.9%) at Sidi- Salem Hospital with the focus on enable others to act behavior (the highest mean percent, 80.7%, 63.4%) at El-Mogamaa El-Tepy and Sidi- Salem hospitals with mean scores 48.40±6.49 and 38.06±6.09, respectively, followed by encourage the heart (80.2%, 61.0%) with mean scores 48.12±6.39 and 36.58±5.08. while, the lowest mean percent (76.1%,59.6) was for inspiring a shared vision at the two hospitals with mean scores 44.16± 6.10 and 35.8±4.87, respectively.

Table (3): Mean percent, mean and standard deviation values of organizational characteristics as perceived by staff nurses at El-Mogamaa El-Tepy and Sidi-Salem Hospitals

Organizational Characteristics	El-Mogamaa El-Tepy Hospital (n=148)		Sidi- Salem Hospital (n= 200)		t-test P
	Mean %	Mean±SD	Mean %	Mean±SD	
Work Discretion (7 items)	74.2	25.97±4.79	64.6	22.61±5.26	65.889 (0.000*)
Time Availability (5 items)	61.4	15.36±1.97	51.5	12.875±3.39	94.734 (0.000*)
Management Support (5 items)	85.1	21.26±4.69	61.4	15.34±5.95	36.460 (0.000*)
Rewards/Reinforcement (3 items)	74.4	11.16±2.35	62.6	9.395±3.29	40.386 (0.000*)
Total CEAI	73.6	73.56±20.66	60.2	60.22±26.79	65.069 (0.000*)

* Significant at 0.05.

Mean percent, mean and standard deviation values of organizational characteristics as perceived by staff nurses at El-Mogamaa El-Tepy and Sidi-Salem Hospitals, evidenced in **Table (3)**. The table shows that there was a statistically significant difference between staff nurses' perceived organizational characteristics at El-Mogamaa El-Tepy and Sidi- Salem Hospitals. Staff nurses perceived that management support as the highest mean percent (85.1%) of organizational character, followed by (74.4%, 74.2%) rewards/reinforcement and work discretion at El-Mogamaa El-Tepy Hospital. While, work discretion had the highest mean percent (64.6%), followed by rewards/reinforcement (62.6%) at Sidi-Salem Hospital. Time availability had the lowest (61.4%, 51.5%) character as perceived by staff nurses at two hospitals, respectively.

Table (4): Mean percent, mean and standard deviation values of staff nurses' innovative behavior, creative and proactivity at El-Mogamaa El-Tepy and Sidi- Salem Hospitals

Staff nurses' innovative behavior	El-Mogamaa El-Tepy Hospital (n=148)		Sidi- Salem Hospital (n= 200)		t-test P
	Mean %	Mean±SD	Mean %	Mean±SD	
Total Creative Efficacy (3 items)	74.1	11.11±2.55	73.5	11.02±2.19	61.578 (0.000*)
Total Proactivity (10 items)	72.9	36.47±6.47	67.1	33.53±6.69	70.819 (0.000*)
Total of nurses' innovation behavior scale (12 items)	73.1	47.49±12.95	68.7	44.66±14.39	77.578 (0.000*)

* Significant at 0.05.

Table (4) shows mean percent, mean and standard deviation values of staff nurses' innovative behavior at El-Mogamaa El-Tepy and Sidi- Salem Hospitals. As a total, staff nurses' innovative behavior's mean percent (73.1%) at El-Mogamaa El-Tepy Hospital was higher than Sidi-Salem Hospital (68.7%) with mean scores 47.49 ± 12.95 and 44.66 ± 14.39 , respectively. In specific, staff nurses' creative efficacy and proactivity at El-Mogamaa El-Tepy Hospital had higher mean percent (74.1%, 72.9%) compared to staff nurses at Sidi- Salem Hospital (73.5%, 67.1%).

Table (5): Correlation between staff nurses' perceived nurse managers' leadership practice and their innovation behavior at El-Mogamaa El-Tepy and Sidi- Salem Hospitals

Perceived nurse managers' leadership practice		Staff nurses' innovation behavior as a total	
		El-Mogamaa El-Tepy Hospital (n=148)	Sidi- Salem Hospital (n=200)
Model the way Subscale	r	0.239**	0.196**
	p	0.003	0.005
Inspire a shared vision	r	0.365**	0.260**
	p	0.000	0.000
Challenge the process	r	0.314**	0.397**
	p	0.000	0.000
Enable others to act	r	0.335**	0.315**
	p	0.000	0.000
Encourage the heart	r	0.316**	0.283**
	p	0.000	0.000
Total leadership practice score	r	0.376**	0.327**
	p	0.000	0.000

** Significant at the 0.01 level (2-tailed).

There was a statistically positive correlation between staff nurses' perceived nurse managers' five leadership practices and their innovation behavior ($p \leq 0.05$) at both El-Mogamaa El-Tepy hospital and Sidi-Salem Hospitals as shown in **table, 5**

Table (6): Correlation between staff nurses' perceived organizational characteristics and their innovation behavior at El-Mogamaa El-Tepy and Sidi- Salem Hospitals

Organizational Characteristics		Staff nurses' innovation behavior as a total	
		El-Mogamaa El-Tepy Hospital (n=148)	Sidi- Salem Hospital (n=200)
Management support subscale	r	0.525**	0.281**
	p	0.000	0.000
Reward reinforcement subscale	r	0.473**	0.380**
	p	0.000	0.000
Time availability subscale	r	0.151	0.153*
	p	0.067	0.031
Work discretion subscale	r	0.466**	0.411**
	p	0.000	0.000
Total CEAI score	r	0.575**	0.428**
	p	0.000	0.000

** Significant at the 0.01 level (2-tailed).

There were statistically positive correlation between staff nurses' innovation behavior as a total in all organizational characteristics' subscales at $p \leq 0.05$ at El-Mogamaa El-Tepy Hospital except time availability subscale ($r= 0.151$, $p= 0.067$), while, there was statistically positive correlation between staff nurses' innovation behavior as a total and all work environment's characteristics subscales at Sidi- Salem Hospital as illustrated in **table, 6**.

Table (7): Correlation between staff nurses' characteristics and their innovation behavior at El-Mogamaa El-Tepy and Sidi- Salem hospitals

Staff nurses' characteristics		Staff nurses' innovation behavior as a total	
		El-Mogamaa El-Tepy Hospital (n=148)	Sidi- Salem Hospital (n=200)
Years of experience in current position	r	0.055	0.116
	p	0.050*	0.014*
Years of experience in hospital	r	-0.084	-0.056
	p	0.308	0.434
Age	r	0.104	0.071
	p	0.021*	0.015*
Total creative efficacy scale	r	0.618**	0.444**
	p	0.000	0.000
Total proactively scale	r	0.622**	0.508**
	p	0.000	0.000

** Significant at the 0.01 level (2-tailed).

Staff nurses' innovation behavior was positively correlated with their years of experience in current position ($r=.050$, $p=.507$ and $r=.116$, $p=.014$), age ($r=.014$, $p=.021$ and $r=.071$, $p=.015$), creative efficacy subscale ($p<0.000$), proactivity subscale ($p<0.000$), and total CEAI score ($p<0.000$), at both El-Mogamaa El-Tepy and Sidi- Salem Hospitals. While, there was no significant correlation between staff nurses' innovation behavior and their years of experience in the hospital ($r=.084$, $p=.308$, and $r=-.056$, $p=.434$), at both hospitals, respectively, as evidenced in **Table, 7**.

IV. Discussion

The unceasingly ever-changing healthcare environment is progressively more complicated and promptly evolving, obligating the development of innovative techniques of care. Therefore, today nurse managers require a range of behaviors to make sure both individual and organizational success in the future. The old processes may have worked in the past in a conventional, constant system, but nowadays the healthcare organization is evolving and unstable, necessitating an innovative leadership model illustrated by engaging, supporting, and investigating skills. The present anticipation of nursing leaders to handle issues of quality, safety, mistakes, and resources are increasingly accelerated, also motivating the need for diverse leadership behaviors (Weberg, et al., 2013).

Staff nurses' perceived nurse managers' leadership practices

Current study result revealed that staff nurses' perceived their nurse managers' five leadership practices was a high frequency at El-Mogamaa El-Tepy Hospital, while demonstrated as a medium level at Sidi- Salem Hospital with the focus on enabling others to act behavior at both hospitals. The results in both hospitals signified that staff nurses' perceived that their nurse managers engaged them in practice more than others and they have the ability to encourage the collaboration and reinforcing them. While, the nurse managers' moderate practice supports staff nurses' teamwork, builds a climate of trust, and appreciates the other team members. Thus, staff nurses' wishes to change will be fostered. Actually, the achievement of the nurse managers' leadership practice depends on the involvement of their staff in teamwork and foster effective relationship (Silva, et al., 2017).

Applying enable others to act requires that the nurse managers enhance the collaboration climate, build trust in their staff members and promote interpersonal relationships, as well as, foster the development of staff nurses' skills (Kouzes & Posner, 2013). Therefore, collaborative leadership facilitates a better service development and establishes common respect between the different positions of the professionals (Stockham, 2016). Along with the current result was Tung, et al., (2014); Clavelle, et al., (2012); Spence Laschinger, et al. (2011) who found that enabling others to act was the highest rated subscales of leadership practices.

Present study findings showed that the second most frequently nurse managers' five leadership practices as perceived by staff nurses were encouraging the heart. This implies that those nurse managers able to find ways to celebrate accomplishments of staff nurses, trust in their abilities, and provide lots of recognition, as well as, strengthen their contributions. These practices confirm the leadership skills of nurse managers to build professional practice environments for their staff nurses and give them the essence of taking the risk for the greatest outcomes for their patients and themselves (Lankshear, et al., 2013). Present result was confirmed by Tung et al., (2014); Peregrina (2009) and Kouzes and Posner (2002) whose found that encourage the heart was the second most frequently used leadership practice and may be revealed the complexity and changing conditions within the hospitals.

Current results revealed that the lowest staff nurses' perceived nurse managers' leadership practices was inspired a shared vision at the two hospitals. This result reflects that those nurse managers have lack of the ability to be looking ahead to create innovative chances for themselves and their staff. Under-dissemination of the hospital vision, changing performance indicators, and lack of resources to accomplish the goals might be signifying this result.

Actually, nurse managers' vision influenced the staff nurses and all nursing team. Staff nurses with a vision have a greater commitment to the work which promotes greater self-confidence and autonomy in accomplishing their tasks. In addition, encouraging staff nurses to advance their basic competencies (Dewing, 2008). Inspiring a shared vision necessitates nurse managers to convey the vision of the nursing department as well as, organizational vision to energize staff nurses towards its accomplishments. Building shared vision has a significant impact on nurses' job satisfaction and organizational commitment (Ngozi, & Ogwo, 2014). The current study result was in line with Peregrina, (2009) who found that the weakest leadership behavior among the observed among nurse unit manager was inspiring a shared vision. Also, Abu-Tineh, et al., (2009) revealed that inspiring a shared vision rated as the lowest leadership practices' behavior.

It noticed that there is a statistically significant difference between staff nurses' perceived nurse managers' five leadership practices behavior at El-Mogamaa El-Tepy and Sidi-Salem Hospitals. This result could be related to that El-Mogamaa El-Tepy staff nurses may have more opportunity to learn and understand about leadership practices than Sidi-Salem Hospital. Simultaneously, the increased numbers of nurses at Sidi-Salem Hospital may have expanded the span of control of nurse managers, so, they practice leadership behavior with low percent than El-Mogamaa El-Tepy staff nurses. Therefore, the nurse managers' specialized training should be established, not only for skills to carry out processes but also, to improve their knowledge and experiences to be effectively lead nursing team members. This result is supported by Abu-Tineh, et al., (2009) who showed significant differences between basic and high schools in practicing leadership behaviors.

Staff nurses' perceived organizational characteristics

As evidenced in the current results, there was a statistically significant difference between staff nurses' perceived organizational characteristics at El-Mogamaa El-Tepy and Sidi-Salam hospitals. This result might be related to the nature and the variety of the affiliated organization, as El-Mogamaa El-Tepy hospital affiliated from Health Insurance and Sidi-Salem hospital affiliated to Ministry of Health and Population. Overall in both hospitals, the mean score for all organizational characteristics subscales and total was positive, and this signified that these characteristics are supported the staff nurses' innovative behavior.

Analysis of the present results revealed that staff nurses perceived that management support as the highest mean percent organizational characteristics, followed by rewards/reinforcement and work discretion at El-Mogamaa El-Tepy Hospital. This result might be due to that their nurse managers provide them with enough resources, trust, and support so they feel that they have a significant impact on the manner by which they perform their work, as well as, engaged them in decision-making process and delegated responsibilities to improve their innovative work behavior

Actually, to possess innovation behavior, staff nurses need that their nurse manager has to create and support the structure and conditions to uphold their level of intensity (Gratton & Erickson, 2007). Along with the result of this study, Amo (2006a), who reported that nurses with high levels of innovation perceived that their managers are highly supportive. On contrary, Xerri, (2012) revealed that organizational support was perceived low level among nurses. And, Baumann (2011) showed that all subjects reported they had not management support for innovation.

Present study findings illustrated that work discretion had the highest mean percent of organizational characteristics, followed by rewards/reinforcement as perceived by staff nurses at Sidi-Salam Hospital. Actually, staff nurses who perceived their organization had the highest mean score of work discretion had reflected that those nurses felt they had a freedom to decide what they perform, have lots of autonomy and ability to make individual decision in their practice and nursing profession.

To maintain the high quality of care and get committed professional nurses, staff nurses need to have the autonomy and independence in their practice. Therefore, nurse managers have to provide them with work discretion and rewards/reinforcement to enhance nurses' autonomous in their work. This can reinforce staff nurses' innovative behavior. Nurses' empowerment involves the nurses' autonomy which is associated with advanced levels of their innovation in their performance (Knol & van Linge, 2008). Current study finding is supported by Baumann (2011), who found that work discretion and rewards/reinforcement had the highest mean score of organizational characteristics among the studied subjects. Also, Holt, et al. (2007) revealed that the sample perceived reward and fairness correlated with innovative behaviors.

The current results illustrated that time availability had the lowest organizational characteristics as perceived by staff nurses at two hospitals. Although, those staff nurses perceived their management support was high, time availability subscale was the lowest, this could be related to that fact that there is a nursing shortage in all type of hospitals. And this can decline nurses' time to care for the patient, as well as, to work on

innovations. Present study result supported by **Altman & Rosa, (2015)** pointed out that the time available when the nurse is not involved in direct patient care is a significant means to promote innovation. Also, **Baumann (2011)**, who found a significant difference in the means of perceived time availability between hospital staff and those who worked in nursing home and assisted living facilities.

Staff nurses' innovative behavior

Present results showed that as a total, staff nurses' innovative behavior at El-Mogamaa El-Tepy Hospital was higher than Sidi-Salem Hospital. In specific, staff nurses' creative efficacy and proactivity at El-Mogamaa El-Tepy hospital had higher mean percent compared to staff nurses at Sidi-Salem hospital. This result reflects that staff nurses at El-Mogamaa El-Tepy Hospital may have an influential force for positive change, always searching for better ways to do tasks and novel manners to improve their life.

Staff nurses at El-Mogamaa El-Tepy Hospital – at Tanta city – usually deal with complex patients who need highly qualified nursing work. Consequently, this can enhance staff nurses to think critically and generate innovative outcomes. When innovation is promoted and valued in the entire work environment of the organization, staff nurses' innovative self-efficacy behavior is improved through modeling the others who have innovative work behavior (**Gassmann and Morhart, 2012**). The present finding supported by **Stoffers et al., (2015)** who pointed out that employees valued innovative work behavior higher in the preferred status than in the current status. Also, **Dul and Ceylan (2010)** emphasized that work environment practice promotes employee creative behavior.

Correlation between staff nurses' perceived nurse managers' leadership practices, organizational and nurses' characteristics and their innovation behavior

There was a statistically positive correlation between staff nurses' perceived nurse managers' five leadership practice and their innovation behavior at both El-Mogamaa El-Tepy and Sidi- Salem hospitals. It is clear that the nurse managers play a unique leadership role, they work closely and directly with staff nurses during offering care for the patients, so, they must be the first source for providing staff nurses with their need information, support, resources and opportunities to maintain the best performance (**Spence Laschinger et al., (2011); Boston-Fleischhauer, 2016**). Also, this fact may be linked to the nurse managers' ability to practice leadership skills in relation to inspiration and incentive (**Silva, et al., 2017**).

Stanley, (2012) anticipated that innovative behavior can be promoted by effective leadership. **Abbas & Asghar (2010)** mentioned that leadership fosters changes in healthcare organizations resulting in innovative which associated the improvement of quality care and professionalism. So, leadership needs to become familiar with genuine innovation and change, perceived the value of nurses' innovation, and recognize how they can be supportive to their employees' innovation behaviors to face the future challenges because of lacking leadership skills could jeopardize staff nurses innovation (**Stanley, 2012; Baumann, 2011**). Also, as concluded by **Brady Germain and Cummings (2010)**, leadership practices were one of the factors that affect nurses' ability to perform and to be motivated. **Dy Bunpin, et al., (2016); Boston-Fleischhauer, (2016)** mentioned that nurses manager have a crucial role in offering the opportunities and building work environment practice that reinforces and supports nurses' innovation.

Present study finding revealed that there were statistical positive correlations between staff nurses' innovation behavior as a total in all organizational characteristics subscales at El-Mogamaa El-Tepy Hospital except time availability subscale, while, there was positive correlation between staff nurses' innovation behavior as a total and all organizational characteristics subscales at Sidi- Salem Hospital. This result exemplifies that these hospitals have an environmental culture that supports staff nurses' innovation. As well as, actually, those staff nurses perceived that their organizations had the highest mean percent of management support, while, they rank time availability as a lowest mean factors to promote innovation behavior.

Hornsby et al., (2008) illustrated that management support is one of the most imperative features that required for fostering participants' innovation. Also, **Gassmann and Morhart, (2012)** and **Janssen (2005)** were in the line with the present study results and found those participants who have higher levels of innovative behaviors perceived their manager as supportive. As well as, **Baumann (2011)** showed a direct significant positive correlation between work environment's characteristics and participants' innovation behavior. While, time availability or rewards/reinforcement had no relationships with participants' innovation behavior

The current study demonstrated that staff nurses' perceived time availability was not significantly correlated with their innovation behaviors at both hospitals. This result indicates that those staff nurses who perceived more work discretion in the manner they perform their work, perceived their nurse managers were supportive, possess higher innovation behaviors levels. While, time availability did not affect their innovation scores. Along with the study finding, **Holt, et al. (2007)** who not detect any significant correlation between time availability and subjects' innovation behavior

As demonstrated in the present result, staff nurses' innovation behavior was positively correlated with their years of experience in current position and with their age at both El-Mogamaa El-Tepy and Sidi-Salem

hospitals, this result means that the staff nurses' higher years of experiences in current position, the higher scores of innovative behavior. Actually, the older staff nurses' age and the higher numbers of years of experiences were facing numerous critical situations with lots of problems and they would have efficient ability to understand their work practice environment and this could encourage their creativity to identify problems. On contrary, **Baumann, (2011)** was contradicted the present findings and found that there were no significant correlations between participants' age, years of experiences and their innovative behavior.

Present study results showed that staff nurses' innovation behavior was positively correlated with their creative efficacy, at both El-Mogamaa El-Tepy and Sidi- Salem hospitals. These findings can be explained by that those staff nurses with a high level of creative efficacy and proactivity may have greatest hospital support to be innovative, perform their work by autonomous manners while they are committed to their hospitals, and being aware of their responsibility to achieve the organizational success. This argument is in accordance with **Baumann, (2011)** and **Hornsby, et al., (2008)**, they found that more innovative employees reported higher levels of creative efficacy.

Current study findings revealed that staff nurses' innovation behavior was positively correlated with their proactivity subscale at both El-Mogamaa El-Tepy and Sidi-Salem hospitals. This finding posited essential suggestion for the nursing practice. Hospital administrators should promote proactivity strategies among staff nurses. Nurse managers' ability to understand and enhance staff nurses creative efficacy and proactivity could potentially develop their innovation behavior (**Baumann, 2011**). This finding is in line with **Baumann, (2011)** and **Gupta & Bhawe, (2007)** who found that there was a positive significant relationship between proactivity and innovation behaviors.

Current study findings revealed that staff nurses' innovation behavior and years of experience in the hospital was not significantly correlated, at both El-Mogamaa El-Tepy and Sidi- Salem hospitals. It appears conflicting, although those staff nurses who had long years of experience in the hospital have lower perceived innovation behaviors. They might perceive their manager as less supportive. This provides implications for efforts to increase staff nurses perceived manager support. Present study result is supported by **Baumann, (2011)** who found that there was no significant correlation between years in the current organization and nurses' innovation behavior.

V. Conclusion

This study has made an important contribution to the nursing, and healthcare literature by clarifying the influence of nurse managers' leadership practice, staff nurses personal and organizational characteristics on their innovative behavior. Staff nurses' innovative behavior at El-Mogamaa El-Tepy Hospital was higher than its level at Sidi- Salem Hospital. Staff nurses perceived their nurses managers' five leadership practices as ideal high frequency at El-Mogamaa El-Tepy Hospital, while demonstrated as medium level at Sidi- Salem Hospital with the emphasize on enable others to act behavior at the two hospitals, followed by encourage the heart, with statistical positive correlation between staff nurses' perceived nurse managers' five leadership practice and their innovation behavior. The surprise was that those staff nurses' perceived their nurse managers had lowest mean percent regarding inspiring a shared vision at the two hospitals even though its importance as a key factor for the change process.

Additionally at El-Mogamaa El-Tepy Hospital, staff nurses perceived management support as the highest work environment characteristics compared to work discretion at Sidi- Salem Hospital, as well as, time availability was lowest hospital characteristics' subscale as perceived by staff nurses, with statistical positive correlation between staff nurses' innovation behavior at all work environment characteristics except time availability subscale at El-Mogamaa El-Tepy Hospital compared to all work environment characteristics subscales at Sidi- Salem Hospital.

There were statistically significant positive correlations between staff nurses' innovation behavior and their years of experience in the current position, age, creative efficacy and proactivity, and total CEAI score at both El-Mogamaa El-Tepy and Sidi- Salem hospitals. While, there were no significant correlations found between staff nurses' innovation behavior and years of experience in hospital at either El-Mogamaa El-Tepy or Sidi- Salem hospital, respectively.

VI. Recommendations

The findings of the present study directed to recommend the following:

Nursing profession need to:

1. Provide funding for supporting nursing leadership professional development programs.
2. Rethink on the basic education of nursing leaders to provide the hospital with effective leaders that they work through a constructive way with their teams.
3. Encourage innovation as a job requirement.

Healthcare organizations need to:

1. Build positive work practice environment (supportive management, openness to novel ideas, promoting thinking) to enhance nursing staff innovation.
2. Orient and disseminate nursing vision and the core values to nursing staff.
3. Establish educational programs for nurse managers to enhance their leadership skills to react to staff nurses' innovation in a supportive way (i.e. fairness, and enthusiasm to provide information and secure resources).

Nurse managers need to:

1. Design and implement in-service educational programs to enhance staff nurses' innovative development.
2. Promote staff nurses' awareness about management support for innovation by maintaining non-punitive environment, encourage their contributions, help them to think in different ways, seek for developments, discover and apply new work processes to accomplish tasks, and adopt new technologies.
3. Respond positively to the staff nurses' innovative efforts by providing the time, resources and adequate information.

Staff nurses need to:

1. Contribute and reinforce leading practices procedures developed through innovative actions.
2. Integrate informatics and technology into nursing practices.

Further research can be conducted to identify strategies that helping nursing staff to develop innovation behavior.

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