

The Relationship between Knowledge Management and Leadership Practice among Nursing Managers

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Abstract: Knowledge management can be viewed as turning data into information and forming information into knowledge. Also seen as a framework for improving the hospital's knowledge infrastructure, or a tool set for getting the right knowledge to the right people in the right form at the right time. **Aim:** The study aimed to explore the relationship between knowledge management and leadership practice among nursing managers. **Design:** A descriptive correlational design was utilized to conduct this study. **Setting:** The study was conducted at Beni-Suef University Hospital. **Subject:** Consisted of a convenience sample (60) of nursing managers. **Data collection:** Two tools were used to collect necessary data; (1): Knowledge Management Questionnaire, (2): Leadership Practice Questionnaire. **Results:** Showed that the nursing managers had low level of both knowledge management and leadership practices. **Conclusion:** There was a highly statistically significant positive correlation between knowledge management and leadership practice among nursing managers. **Recommendations:** This study recommended Conduct in service training to increase nursing managers awareness about knowledge management and potential risks of hiding knowledge.

Keywords: Knowledge management, Leadership practice, Nursing managers

I. Introduction

Healthcare organizations depend on information on curing patients, providing care and health satisfaction. Knowledge is divided into tacit knowledge and explicit knowledge. Tacit knowledge cannot be transferred to others because it only remains in an individual mind as it is a result of personal experience. Explicit knowledge is easy to share or communicate in different forms. Additionally; explicit knowledge can be created, written, documented, and transferred through a communication mode (Hidayat & Sensuse, 2022).

Knowledge management (KM) is an organized method focused on creating, sharing, harvesting knowledge, and leveraging it as an organizational asset to enhance organizational leaders' abilities to deliver products or services. The healthcare section can benefit from KM through enhancing the quality of care, reducing cost and medical error, and improving organizational learning and organizing knowledge. The basic objective of Healthcare knowledge management (HKM) is to create value, raise and refine the basic healthcare knowledge of healthcare organizations (Nagendra & Morappakkam, 2022).

Factors that determine effective KM are people's readiness to share knowledge, and commitment to the sharing behavior. Intention to share knowledge is especially important in delimiting the use of technology in KM, The ownership of knowledge as perceived by individuals pinpoints the degree of knowledge creation, sharing and retention within an organization and task interrelating has a positive influence on the use of technology in KM. More task interdependence

motivates people to use collaborative technologies for information and knowledge sharing (Ali et al, 2019 and Yaqoob et al., 2021).

Healthcare leaders can take the approach of coaching, mentoring, and building trust to help, support staff in knowledge sharing before applying a new system, manages and monitor the flow of information within an organization. Nursing practices must begin to take merits of the new Information technology (IT) capabilities. Nursing managers have to share knowledge and create organizational culture facilitating learning (Bianchi et al., 2018).

An effective KM can occur only if people sharing in the process are properly led, engaged and motivated during the whole process. As a result, leadership acts as one of the most prominent enablers of KM application and success. Although organizations and their leaders are increasingly interested in adopting and using KM quickly, recent reports such as Bain's Management Tools and Trends survey have revealed that KM, as a strategic tool, declines due to poor performance of deployments in organizations (Pax, 2022).

II. Significance of the Study

Leaders of successful organizations are continuously looking for better ways to improve performance and outcomes. Frequent disappointments with previous management approaches have motivated managers to gain new vision and understanding into the underlying, but intricate mechanisms such as knowledge which control and direct an organizations' effectiveness was one of the biggest challenges that faced them (Demir, et al, 2021). Knowledge Management, far from being a management heresy, is wide, multi-dimensional and covers most aspects of the organizations' activities. Healthcare sector need to set broad priorities and integrate the goals of managing intellectual capital and the corresponding effective knowledge processes; this requires structured knowledge management (Wahab, 2022).

The significance placed on that nurses have to take responsibility about how to create, capture knowledge and identify possible predictors of knowledge-sharing behavior that can support a hospital's sustainable knowledge management strategy, also Knowledge management strategies could help managers to increase and improve the performance of health care providers.

III. Aim of the study

The study aimed to explore the relationship between knowledge management and leadership practices among nursing managers through:

- 1- Assess the knowledge management of the nursing managers.
- 2- Determine the leadership practice of nursing managers.
- 3- Find out the relationship between knowledge management and leadership practice among nursing managers.

Research Question

- 1- Is there a relationship between knowledge management and leadership practice among nursing managers?

IV. Subjects and Method

Research design

A descriptive correlational design was utilized to conduct this study.

Study Setting

The study was conducted at Beni-Suef University Hospital. It consisted of two separated building; **the first building is oncology building** that consists of four floors and **the second building contains** 7 floors with bed capacity of 400 beds;

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the first floor contains hemodialysis unit ,surgical ICU, emergency unit and emergency intensive care unit, the second floor contains the chemistry laboratory and orthopedic department, the third floor contain intensive care unit and operations room contain 7 rooms, the fourth floor contains surgical departments, neurosurgery department and ophthalmology department, the fifth floor contains cardiac care unit, plastic surgery, medical department, pediatric department, and pediatric intensive care unit, the sixth floor contains neonate intensive care unit, obstetric department, and the seventh floor contains chest department and chest intensive care unit.

Study Subjects

The study subject included all the available nursing managers (Bachelor and master degree) (n= 60) in Beni-Suef University Hospital who was presented at the time of data collection

Type of sampling

Convenient sample was used to select the study subject.

Tools of data collection

Two tools were used to collect necessary data:

1sttool: Knowledge Management Questionnaire:

The tool was developed by the researcher based on review related literature (**Karamitri et al, 2020, Feenstra, 2022**) and consisted of two parts:

Part 1: Personal data: this part included personal characteristics of nursing managers as age, gender, position, educational qualifications and years of experience).

Part 2: Knowledge Management Questionnaire: this part used to assess knowledge management among nursing managers. It included (54) items divided into 12 dimensions (perception =5 items, information technology = 4, intrinsic motivation =4, extrinsic motivation =4, synthesis of knowledge = 5, sharing of knowledge = 5, knowledge application = 4, knowledge protection = 4, cooperation =3, leadership =3, culture =10, and (barriers = 3 items that is a **reversed item***)

Scoring system: each knowledge management item was rated on 3 point lickert scale ; for positive items ranged from 1 for disagree, 2 for neutral and 3 for agree and for negative items (reversed item of the barrier dimension) ranged from 1 for agree, 2 for neutral and 3 for disagree.

- **Satisfied knowledge management: > 60%**
- **Unsatisfied Knowledge Management: ≤ 60%**

2nd tool: Leadership Practice Questionnaire: this tool was developed by researcher after reviewing related literature (**Lopez, 2012 & Kouzes &Posner, 2013**) to determine leadership practice among nursing managers. It consisted of 30 items divided into five dimensions: model the way (6) inspire a shared vision (6), challenge the process (6), enable others to act (6), and encourage the heart (6).

Scoring system: each leadership practice item was rated on 3 point lickert scale ranging from 1 for disagree, 2 for neutral and 3 for agree.

- ✓ **Satisfied leadership practice: > 60%**
- ✓ **Unsatisfied leadership practice: ≤ 60%**



Validity

Validity of the tools was done namely face validity and content validity. The tools were translated into Arabic and tested by a group of five experts specialized in nursing administration from different four universities; Ain Shams University (one professor), Menoufia University (one professor), Tanta University (one professor) and Helwan University (one professor and one assistant professor) through an opinionative sheet to measure validity of the tools and the necessary modifications were done accordingly.

Reliability of the tools

Reliability for the utilized tools was tested to determine the extent to which the items of the tools are inter-correlated to each other. The Cronbach's alpha model is one of the most popular reliability statistics in use today and considered as a model of internal consistency that used to estimate of reliability of test scores. Reliability of Knowledge Management Questionnaire for nursing managers by both Cronbach's alpha and half split test was (0.938& 0.928) respectively. While Reliability of Leadership Practice Questionnaire for nursing managers by both Cronbach's alpha and half split test was (0.832& 0.863) respectively. Statistical equation of Cronbach's alpha reliability coefficient and half split normally ranges between 0-1.

V. Ethical considerations

The research approval was obtained from Faculty of Nursing ethical committee of Helwan University before starting the study, an approval was obtained from the director of Beni-suef University Hospital. Participants in the study (nursing managers) were informed about the purpose and process of the study and that the study is harmless and their participation is voluntary and they have the right to withdrawal from the study at any time without reason. They also were assured that, anonymity and confidentiality will be guaranteed, as well as gathered data will be used for the research purpose only. Ethics, values, culture and believes was respected.

VI. Pilot study

The pilot study was carried out on (10%) of the total sample size (6 nursing managers) to test applicability and clarity of tools and time needed to complete it. Total time needed to complete both tools was ranged between (25:40) minutes. No modifications were done so participants in the pilot study were included in the study sample.

VII. Field Work

The purpose of the study was simply explained to the participants who agree to participate in the study prior to any data collection. Field work started actually at the beginning of November 2021 to the end of May 2022 lasted for seven months. After securing the official approval from the hospital for conducting the study, the researcher met the nursing director of the hospital to determine the suitable time for data collection.

The researcher attended the hospital two days per week, collected data by herself through interviewing nursing managers and was presented at all time during fulfilling the questionnaire forms to answer any questions. Also the researcher checked the completeness of each filled sheet to ensure the absence of any missing data.

VIII. Statistical design

Data entry and analysis were performed using SPSS statistical package version 25. Categorical variables were expressed as number and percentage while continuous variables were expressed as (mean ±SD). Chi-Square (x²) was used to test the association between row and column variable of qualitative data. Pearson correlation was done to measure correlation between quantitative variables.

For all tests, p-value ≤ 0.05 was considered statistically significant, P-value ≤ 0.01 was considered highly statistically significant. While p-value > 0.05 was considered not significant.

IX. Results

Table (1): Personal characteristics of the studied nursing managers (n=60)

Nursing manager's Characteristics		N	%	χ ²	P-Value
▪ Age (in years)	23- ≤28	15	25.0	3.100	0.212
	29- ≤34	26	43.3		
	≥ 35 years	19	31.7		
$\bar{x} \pm SD$	37.01 ± 9.1				
▪ Gender	Male	11	18.3	24.0	0.000**
	Female	49	81.7		
Ratio	M to F ratio=0.2 : 1				
▪ Marital status	Un married	20	33.3	6.66	0.010**
	Married	40	66.7		
▪ Current position	Nursing director	1	1.7	148	0.000**
	Nursing director assistant	4	6.7		
	Nursing supervisor	5	8.3		
	Infection control nurses	3	5.0		
	Quality nursing staff	2	3.3		
	Head nurses	45	75.0		
▪ Nursing qualifications	Bachelor	55	91.7	41.6	0.000**
	Master	5	8.3		
▪ Year of experience	< 5 years	8	13.3	28.9	0.000**
	≥ 5 years <10 years	30	50.0		
	≥ 10 years <15 years	19	31.7		
	≥ 15 years	3	5.0		
$\bar{x} \pm SD$	8.58 ± 3.72				

Significant p ≤ 0.05

**Highly significant p ≤ 0.01

Table (1): showed Personal characteristics of the studied nursing managers, 43.3% of the age range of the studied nursing managers was 29- ≤34 years old, with a mean age of 37.01 ± 9.1. Moreover, the majority (81.7%) of them were female, with male to female ratio is 0.2: 1. As considering the marital status, more than two third (66.7%) of them were married. As regards education, the majority (91.7%) of the studied nursing manager were holding a bachelor's nursing degrees. As concerning the Current position, about three quarter of the studied nursing managers were a head nurse. As considering, year of experience, one half of (50%) the studied nursing managers had experience ranged from ≥ 5 years <10 years with a mean of 8.58 ± 3.72.

Table (2): Mean and Standard Deviation of Knowledge Management Subscales among the Studied Nursing Managers (n=60)

Subscales	Number of items	Mean ± SD
Perception	5	8.20 ± 2.23
Information Technology	4	6.15 ± 1.30
Intrinsic motivation	4	6.43 ± 1.55
Extrinsic motivation	4	6.17 ± 1.66
synthesis of knowledge	5	8.0 ± 1.61
sharing of knowledge	5	7.77 ± 1.81
knowledge application	4	6.12 ± 1.55
knowledge protection	4	6.27 ± 1.38
Cooperation	3	4.73 ± 1.14
Leadership	3	4.55 ± 1.15
Culture	10	15.93 ± 3.23
Barriers	3	4.68 ± 1.04
Total knowledge management	54	85.0 ± 14.65

Table (2): revealed means and standard deviation of knowledge management subscales among the studied nursing managers, it denotes that knowledge management subscales were scaled from the highest to lowest mean value as following: culture, perception, synthesis of knowledge, sharing of knowledge, Intrinsic motivation, knowledge protection, Extrinsic motivation, Information Technology, knowledge application, Cooperation, Barriers and Leadership with means and standard deviations (15.93 ± 3.23, 8.20 ± 2.23, 8.0 ± 1.61, 7.77 ± 1.81, 6.43 ± 1.55, 6.27 ± 1.38, 6.17 ± 1.66, 6.15 ± 1.30, 6.12 ± 1.55, 4.73 ± 1.14, 4.68 ± 1.04 and 4.55 ± 1.15 respectively).

Table (3): Means and standard deviation of leadership practice subscales among the studied nursing managers (n=60)

Subscales	Number of items	Mean± SD
Model the Way	6	10.50 ± 2.34
Encourage the Heart	6	10.27 ± 2.57
Enable Others to Act	6	10.25 ± 2.14
Challenge the Process	6	10.25 ± 2.28
Inspire a Shared Vision	6	10.00 ± 2.31
Total Leadership Practice	30	51.27 ± 10.5

Table (3): Indicated means and standard deviation of leadership practice subscales among the studied nursing managers, it denotes that leadership practice subscales were scaled from the highest to lowest mean value as following: Model the Way, Encourage the Heart, Enable Others to Act, Challenge the Process, and Inspire a Shared Vision with means and standard deviations (10.50 ± 2.34 , 10.27 ± 2.57 , 10.25 ± 2.14 , 10.25 ± 2.28 , and 10.00 ± 2.31 respectively).

Figure (1): Percentage distribution of Knowledge Management and Leadership Practice among Nursing managers (N=60)

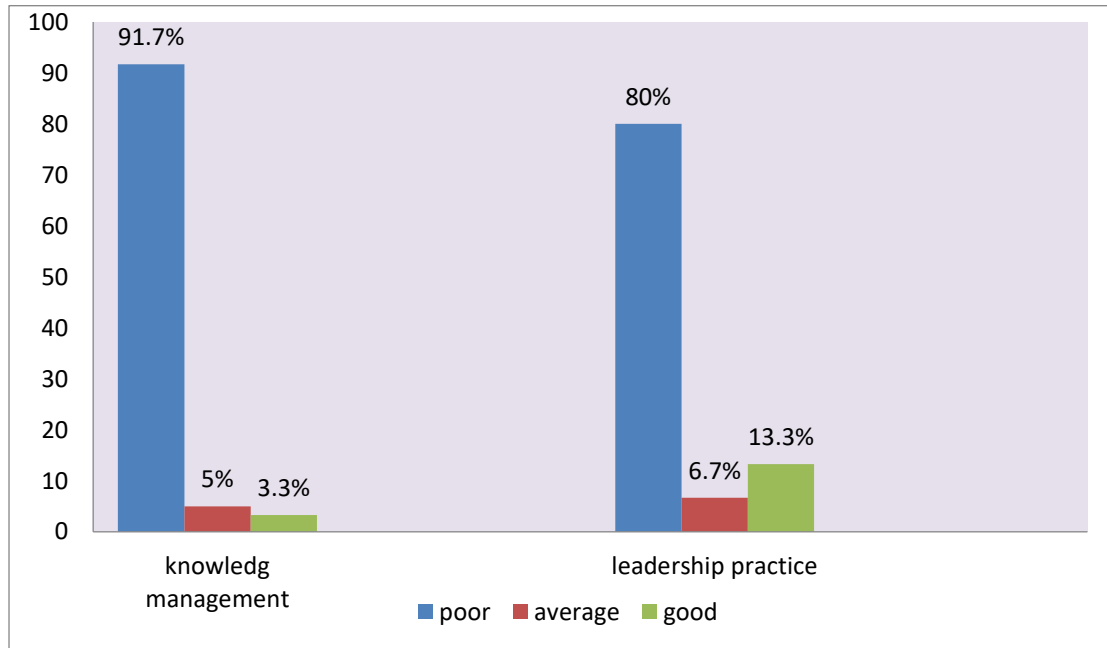


Figure (1): revealed that most of the studied nursing managers (91.7%) had poor knowledge management, and only 5% of them demonstrate average knowledge management. While most of the studied nursing managers (80 %) had poor leadership practice and 13.3% of them had good leadership practice.

Table (4): Correlation between total knowledge management, age and years of experience among the studied nursing managers (n=60)

	Total knowledge management	
	Correlation Coefficient (r)	P- Value
▪ Age	0.876	0.000**
▪ Years of experience	0.962	0.000**

*Highly significant $p < 0.01$

Table (4): revealed that, there was a significant statistical positive correlation between total knowledge management and studied nursing managers' age & years of experience, ($r = 0.876$ & 0.962 , respectively) at $P = 0.000$.

Table (5): Correlation between total leadership practice, age, and years of experience among the studied nursing managers (n=60)

	Total leadership practice	
	Correlation Coefficient (r)	P- Value
▪ Age	0.954	0.000**
▪ Years of experience	0.952	0.000**

*Highly significant $p < 0.01$

Table (5): Indicated that, there was a highly significant statistical positive correlation between total leadership practice and studied nursing managers' age & years of experience, ($r = 0.954$ & 0.952 , respectively) at $P = 0.000$.

Figure 2): Scatter dot correlation between knowledge management and leadership practice among the studied nursing managers (n=60)

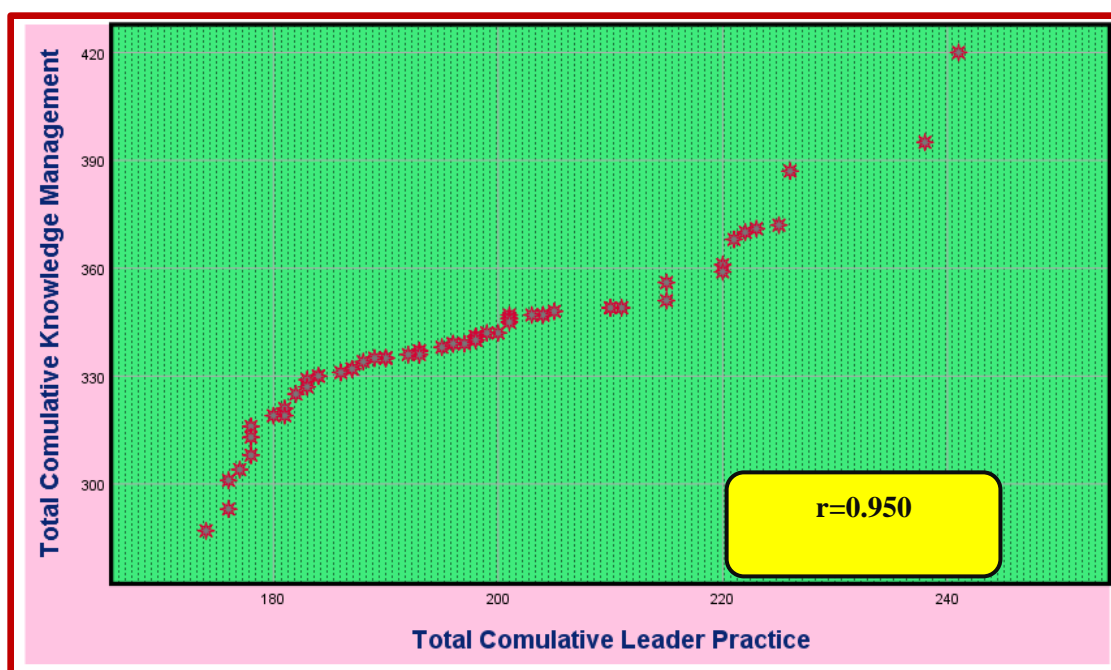


Figure (2): Represented that, there was a highly statistically significant positive correlation between knowledge management and leadership practice among studied nursing managers, at ($r = 0.950$ & $P = 0.000$).

X. Discussion

The study results showed that more than one third of the studied nursing manager's age was between 29 up to 34 years. From the researcher point of view this may be due to study sample including only the nursing managers that usually with more age than staff nurses. Also the majority of the study subjects were females and holding a bachelor's nursing degrees. From the researcher point of view this may be due to nursing profession still receive females more than males despite of increasing flow of males to the profession, also nursing management position thoroughly for bachelor degree rather than technical institute. Regarding marital status more than two third of study subjects were married and about three quarter of the studied nursing managers were a head nurses and half of them had experience ranged from five to less than ten years.

The current study results were supported by (Ayanbode & Nwagwu, 2021) who studied "Collaborative technologies and knowledge management in psychiatric hospitals in South West Nigeria " and stated that more than two thirds of the

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study subjects were females and more than one third of them were in the age group of 30-35 years, also one third of the same study subject had from six up to ten years of working experience.

Furthermore, the current study results were in contrast with (**Albatena, 2019**) who studied "The Effect of Using Expert Systems in the Implementation of Knowledge Management Processes Jordanian King Abdulla University Hospital" and stated that more than two thirds of the study subjects were males and nearly half of them had eleven up to fifteen years of working experience.

Also, the current study results were in consistent with (**Younes et al, 2019**) who studied "The Effect of Leadership Program on Leadership Practice among Nurse Managers" and founded that half of the studied subject age was more than forty years and had more than ten years of working experiences.

The current study result displayed that the majority of the studied nursing managers had a poor knowledge management. From the researcher point of view this may be due to work overload that act as a barrier preventing nursing managers from being updated with new trends and concepts in our profession and continuously working on their knowledge development, also knowledge management is a kind of a new trend in several hospitals in Egypt. This study result was supported by (Okonkwo et al., 2020) who studied "Managerial Competencies; A survey of healthcare managers in a tertiary hospital in Calabar, south-south Nigeria" and noted that there was inadequate knowledge management in a typical tertiary hospital in Nigeria.

Moreover, the current study result was congruent with (**Belay et al, 2020**) who studied "Alignment of knowledge management process with clinical process to support evidence based decision in healthcare improvements: The case of selected Ethiopian hospitals " and concluded that there was a weak trends of KM in our sample hospitals. Furthermore, this result was consistent with (**Karsikas et al, 2022**) who studied "Health care managers' competence in knowledge management: A scoping review" revealed that there was a limited understanding of health care managers' competence in knowledge management. The current study result was unsupported by (**Hegazy et al, 2018**) who studied "The relationship between healthcare organization culture and Nurses' Knowledge Management " stated that the majority of the studied nursing personnel had a high level of knowledge management.

The current study results stated that the majority of the studied nursing managers had poor leadership practice. From the researcher point of view this may be due to work burden that cause confusion of the nursing managers mind, lack of continues learning about leadership and its requirements and development a personal skill. Also the focus is on the work activities and neglecting the importance of practicing leadership behaviors, beside lack of training on leadership practice in area of work. The current study result was matched with (**Younes et al, 2019**) who studied "The Effect of Leadership Program on Leadership Practice among Nurse Managers" and stated that the lowest leadership practice level was among nurse managers.

The current study result was in the same line with (**Shaheen et al., 2021**) who studied" Impact of Implementing a Leadership Development Training Program for Staff Nurses on Structural Empowerment, Leadership Self-Efficacy, and Clinical Leadership Practices" and stated that the study subject had less frequent leadership practice. The current study results were in contrast with (**Mohammed et al., 2022**) who studied "Assessing Head Nurses Leadership Practice Using 360 Degree Feedback" and stated that the majority of studied head nurses had a high level of leadership practice

The current study results revealed that there was a highly significant statistical positive correlation between knowledge management, leadership practice and studied nursing managers' age & years of experience. From the researcher point of view this may be due to the ability of the studied nursing managers to learn and concentrate enhanced with increasing their age and years of experience as they become more knowledgeable, more interested in continue their education and

have more capacity to learn. Also positioned as a leader in their area required them to be more opened to the new concepts and trends in the nursing profession.

The current study results were incongruent with **(Elkhawas et al., 2021)** who studied "The relationship between Emotional Intelligence and Leadership Practice among Nursing Leaders" and who revealed that there were no statistically significant differences between leadership practice and nursing leaders related to age and years of experience. Furthermore, the current study results were in contrast with **(Hegazy et al., 2018)** who studied "The Relationship between Healthcare Organizational Culture and Nurse's Knowledge Management" and stated that there was no statistical significant difference between studied nursing personnel according to age groups and years of experiences.

The current study results indicated that, there was a highly statistically significant positive correlation between knowledge management and leadership practice. The current study result was in similar with **(Wahab, 2022)** who studied "Knowledge Management Processes and their Impact on Leadership Skills" and stated that there is a correlation between knowledge management processes and classifications of leadership skills. Moreover, the current study results were supported by **(Pax, 2022)** in a study of "Examining the Influence of Knowledge Leadership Behaviors on the Enablers of Knowledge Management" and who revealed that Leadership behaviors influence the successful adoption of knowledge management, and there is also a statistically significant positive relationship between role modeling (RM) and IT support. Also the study results were matched with **(Daña et al., 2020)** who studied "Complex network analysis for knowledge management and organizational intelligence" and discussed that, effective knowledge management and organizational intelligence have a positive association with organizational performance improving decision-making and the practices developed by leaders increase the capacity to create new processes.

Also the study result was in agreement with **(Lunden et al., 2017)** in a study of "A systematic review of factors influencing knowledge management and the nurse leaders' role" and who noted that successful knowledge management in an organization requires managers who take an active role in the knowledge management process as well as show an exemplary attitude towards the systematic development of competence. Leader commitment and competency were factors related to leadership facilitating knowledge management.

Also the current study were in similarity with **(Anonson et al., 2014)** in a study of "Qualities of exemplary nurse leaders: Perspectives of frontline nurses" and suggested that managers' leadership skills and behavior strongly impact knowledge management. Also the current study result was in the same line with **(Kılıç & Uludağ, 2021)** in a study of "The Effects of Transformational Leadership on Organizational Performance: Testing the Mediating Effects of Knowledge Management" and concluded that knowledge management mediates the effect of transformational leadership on organizational performance.

XI. Conclusion

In the light of the current study results; concluded that the majority of nursing managers have a low knowledge management and leadership practice. Moreover, there was a highly statistically significant positive correlation between knowledge management and leadership practice among nursing managers.

XII. Recommendations

Based on the previous findings, the following recommendations suggested:

1. Conduct in service training to increase nursing staff awareness about knowledge management and potential risks of hiding knowledge
2. Train knowledge management professionals who are capable of leading knowledge management initiatives in their organizations.
3. Develop program for improving applying of leadership practice among nursing managers.

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