Nurse Managers' Perspective towards Evidence Based –Nursing Management

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Abstract

Background: Evidence-based nursing management is the systematic manner of the best available evidence to management decision-making, with the goal of enhancing the performance of healthcare organizations. **Aim:** This study aimed to assess the nurse managers' perspective towards evidence-based nursing management. **Method: Setting:** This study was conducted at four hospitals; including the International Teaching Tanta Hospital, and Kafr El-Shiekh University Hospital, which are affiliated to Ministry of Higher Education and Scientific Research, as well as Al-Minshawi General Hospital and Kafr El-Shiekh General Hospital, which are affiliated to Ministry of Health and Population. **Subjects:** This study involved all nurse managers (n=159) in four hospitals. **Tools:** Two tools were used: nurse managers' evidence-based nursing management knowledge questionnaire and nurse managers' opinions about evidence-based nursing management questionnaire. **Results:** 60.4% of nurse managers had a moderate level of knowledge about evidence-based nursing management. 74.8% of nurse managers had moderate utilize of evidence's sources. The majority of nurse managers identified that the teamwork factor was the most common frequent barrier and facilitator at the same time. **Conclusions:** The nurse manager had moderate knowledge about evidence-based nursing management. There was the significance positive correlation between levels of nurse managers' knowledge of evidence based-nursing management and their levels of nurse manager utilization of evidence sources in Ministry of Health and Population hospitals. **Recommendations:** Developing programs to enhance knowledge of evidence based-nursing management and utilization of evidence sources in decision-making process.

Keywords: Evidence based-nursing management, Decision-making, Nurse managers

Introduction

Nursing plays a vital role in the health care industry because it concentration lies in patient care. Nurses work in various specialties to recuperate patient's health and prevent injuries and illness. As the largest health-care professionals, nurses when involved in the different parts of the healthcare process (management and nursing care), achieved better result; communication is enhanced, along with collaboration between the different professional groups, innovation, organizational commitment; and staff retention **González Garcia, Pinto-Carral, Sanz Villorejo &Marques-Manchez, 2020).**

Nurse managers are leaders who serve as guides for nurses, provide them with higher-level leadership, and coordinate activities within the nursing departments **(Alharbi, Rasmussen &Magarey, 2022).** To ensure the quality and safety of healthcare delivered, as well as cost efficiency and effectiveness, nurse managers must make decisions using an evidence-based nursing management approach **(Alsubaie & Bugis, 2021)**.

Nurse managers at all management levels are fundamental for the nursing work process to focus on the scientific basis at the institutional and practical politics interface, as well as organize, stimulate, and make it possible for the

nursing team to develop themselves in this context (**Krah et al., 2023**). The nurse manager handles an immense amount of responsibility, such as the hiring and firing of staff, judging the competency of staff, assuming budgetary responsibility, and taking overall responsibility for the delivery of safe, high-quality patient care (**Shafaghat, Bastani, Imani Nasab, &Rahimizarchi , 2022**). Therefore, nursing managers are forced to use evidence-based healthcare management to be effective (**Hasanpoor, Siraneh Belete, Janati, Hajebrahimi &Haghgoshayie, 2019**).

Evidence-based nursing management is a useful framework to assist managers in making organizational decisions based on the best available evidence. Evidence-based nursing to uses the best available evidence to make nursing care decisions, combining with nurses' clinical expertise, the client's values and preferences, and the available resources (**Wang, Xia, Halili, Tang, &Chen, 2023**). By bridging, the gap between nursing research and nursing practice, evidence-based nursing reduces nursing care discrepancy effectively, improves nursing care quality and patient safety, reduces healthcare costs, and promotes nursing professional development (**Zhao et al., 2022**).

Nursing managers have a direct impact on evidence-based practice implementation in the daily practice of nursing, patient care activities, and patient safety. Therefore, nurse managers have a professional responsibility to demonstrate the best performance, integrate accessible research in to their own management practices, and facilitate the implementation EBP into the daily practice of nurses within their span of control (**Bianchi et al., 2018**). Nurse managers support EBP and their leadership activities to enhance its implementation, which are influenced by their organizations'' characteristics and environment (**Bowles, Batcheller, Adams, Zimmermann &Pappas ,2019**).

Many decisions are still being made primarily based on experience without reliance on any other sources of data. While health organizational environments continue to change vastly and rapidly, management practices are not evolving as fast as the increasingly data-driven environment. Within this context, evidence-based nursing management has been proposed as an approach to encourage greater reliance on data in decision-making (**Hasanpoor et al., 2019**). The adoption of evidence-based nursing management in this context is being seen as a timely strategic step that could enable nurse managers to better cope with the complexity of healthcare organizations by relying on the best available evidence to improve their decision-making, and consequently achieve better organizational outcomes (**Shafaghat, et al., 2022**).

In the rapidly evolving healthcare field, it is vital to regularly assess the attitudes, skills, and knowledge of healthcare professionals, including nurse managers, regarding evidence-based nursing management approaches. This ongoing evaluation helps to identify obstacles and challenges that enable appropriate actions to be taken (**Youssef,Saleeb, Gebreal &Ghazy, 2023**). The movement towards evidence-based nursing management poses new organizational challenges to provide the necessary infrastructure for the promotion of effective nursing interventions based on the best available evidence (**Sallam,Snygg and Sallam 2024**).

As mentioned by **Baniomar & Obeidat (2021),** the key leadership skills, including creating a clear vision and consistently communicating that vision, using good interpersonal skills, setting objectives, and providing education to support nurses, are essential components of sustaining commitment to evidence-based nursing management, which could positively impact patient outcomes. In evidence based-nursing management, there are many sources of

utilization such as scientific research evidence, the manager's professional expertise, and political social development plans. These sources make the process of decision-making effective **(Haghgoshayie & Hassanpoor 2021)**. Nursing leaders today expertly read, and review journals and books, hire consultants, and attend seminars. Moreover, many of these nurse leaders still seem to lack a serious understanding of evidence based-nursing management and its implementation in nursing **(Rylee & Cvanagh 2023)**. To enhance the uptake of evidence-based nursing management, it is important to explore health care managers' attitudes, perceived barriers and facilitators related nursing practice **(Alsubaie & Bugis 2021).**

The facilitators and barriers of evidence-based nursing management can be related to organizational barriers and limitations perceived in the work environment such as lack of time and limited support for implementing research. These facilitators and barriers can be individual barriers such as limited understanding of research methods and findings, as well as lack of interest **(Azar, Alolayyan, &Alyahya 2023. Additionally** absence of administrative support can be a facilitator or barrier for evidence-based nursing management utilization at the work area **(Aynalem, Yazew, & Gebrie 2021).** As well as facilitators of evidence-based, management related to efficient research training, accessibility to internet facilities and improved computers, and collaboration with academic nurses **(Ayoubian, Nasiripour, Tabibbi &Bahadori, 2020).**

Study significance:
The shifting healthcare perspective over the last two decades has the complicated nursing management field. Nursing management as a skill and specialty has become an important and fundamental issue due to its nature and complexity (**Hasanpoor et al., 2019**). The use of evidence-based management applications in nursing solves many managerial challenges,

which improve patient outcomes, nursing satisfaction, and leadership success **(Hasanpoor et al., 2019; Rynes, & Bartunek 2017; Majers & Warshawsky, 2020**). By creating a culture of inquiry that utilizes the best available evidence, nurse managers can participate in delivering successful outcomes that support the practice environment, organizational success, and healthcare outcomes **(Hasanpoor et al., ;2019 Shafaghat et al., 2021).**

Evidence-informed decision-making is one of the core competencies for nurse managers. While developing managers' abilities is necessary for their adoption of evidence-based management, it is not sufficient alone since there are also individual, organizational, and institutional-level factors that influence resources utilization in decision-making. **(Daouk-Öyry,Sahakian &Van de Vijer ,2021)** The adoption of evidence-based management is predicated on a fit between the personal characteristics of the decision-maker and the demands of the context. So not only do the managers need to possess evidence-based management competencies, but they also need to be provided with the opportunity to practice evidence-based management in their organization Thus, to enhance the uptake of evidence-based nursing management, it is important to explore the nurse managers' perspectives towards evidence-based nursing management.

Aim of the Study
The aim of the study was to assess the nurse mangers' perspectives towards evidence-based nursing management.

Research questions:
- What are the levels of evidence-based nursing management knowledge among nurse managers?
What are the levels of nurse mangers' opinions about evidence-based nursing management?
- What is the difference between nurse mangers' perspective at the International Teaching Hospital and Kafr El-Shiekh

University Hospital, also, Al-Minshawi General Hospital and Kafr El-Shiekh General Hospital?

Subjects and Method

Research design:

A descriptive comparative research design was used.

Setting:

The present study was conducted at four hospitals including the International Teaching Tanta Hospital, Kafr El-Shiekh University Hospital, Al-Minshawi General Hospital and Kafr El-Shiekh General Hospital.

Subjects:

This study was involved all nurse managers (n=159) in International Hospital Tanta (n=41), Kafr El-Shiekh University Hospital (n=45), El Minshawi General

Tools of data collection:

To achieve the aim of study the following tools were used:

Tool I: Nurse Managers Evidence-Based Nursing Management Knowledge Questionnaire. This tool was developed by the researcher based on relevant literature reviews **Alsubaie 2021; Guo 2016& Ofei 2020 and** to assess the levels of evidence-based nursing management knowledge among nurse managers. It was consisted of three parts as follow:

Part 1: Personal data of nurse managers: It included nurse manager personal data as age, sex, marital status, department's name, years of experience as a nurse manger, position, level of education, and attending the educational programs about evidence- based nursing management.

Part 2: Evidence-based nursing management knowledge questionnaire:

It consisted of 20 questions about evidence-based nursing management including items of concepts, importance, sources, barriers, facilitators, and process. The questions were in the form of true and false included (10 questions), multiple choices included (4

questions) and - cross matching included (6 questions).

Scoring system:

Each question was allotted score of one for correct answer and zero for wrong answer. The total score was calculated by summing scores of all categories and divided according to statistical cutoff points as follow:

- High level of evidence-based nursing management knowledge > 85%.

- Moderate level of evidence-based nursing management knowledge 60-85%.

- Poor level of evidence-based nursing management knowledge < 60%.

Part 3: Utilization of evidence's sources questionnaire.

This part is a self-administrated questionnaire to assess the nurse managers' utilization of information sources for making decisions. It included 20 items divided to six domains according to the following:

- **Scientific and research evidence i**ncluded 3 items.

- **Facts and information about the hospital** included 4 items.

- **Political-social development plans** included 5 items.

- **Managers' professional expertise** included 3 items.

- **Ethical-moral evidence and values** included 2 items.

- **Values and expectations of all stakeholders** included 3 items**.**

Scoring System:

The nurse managers' responses were measured using the five-point Likert Scale which ranged from 5=often, 4=always, 3=sometimes, 2= rarely, and 1=never. A sum of scores for each respondent was calculated to determine the most frequent utilization of evidence's sources according to the maximum percentage. The total score was calculated by summing scores of all categories and divided according to statistical cutoff points as follow:

- High level of evidence utilization information sources > 75%.

- Moderate level of evidence utilization information sources > 50% -75%.
- Low level of evidence utilization information sources ≤ 50%.

Tool II: Nurse Managers' Opinions about Evidence-Based Nursing Management Questionnaire

The researcher was developed this tool based on related literature reviews **Alsubaie 2021; Belita 2020; Hasanpoor 2019; Guo 2017& Ofei 2020**it was used to assess the nurse managers' opinions regarding barriers and facilitators of evidence-based nursing management. It included 31 items divided into five domains according to the following:

- **Nurse managers' characteristics factors** included 8 items 4 items as a barrier and 4 items as a facilitator.
- **Decision-making environmental factors** included 6 items 2 items as a barrier and 4 items as a facilitator.
- **Training and research systems** included 5 items 3 items as a barrier and 2 items as a facilitator.
- **Organizational factors** included 6 items 3 items as a barrier and 3 items as a facilitator.
- **Team work factors** included 6 items 3 items as a barrier and 3 items as a facilitator.

Scoring System:

The nurse manager opinions were measured by the 5-point Likert Scale, which ranged from 5= strongly agree to 1= strongly disagree. A sum of scores for each respondent was calculated to determine the most frequent barriers or most frequent facilitators of evidence-based nursing management.

Method

1. Official permission to carry out the study was obtained from the Dean of Faculty of Nursing and was sent to the authoritative personnel of the previously mentioned settings.

2. Ethical considerations:

 a) An approval of the Ethical and Scientific Research Committee at Faculty of Nursing was obtained, Cod No (62/5/2022).

 b) All participants were informed about the purpose of the study.

 c) An informed consent will be taken from each participant in the   study including the right to withdraw at any time.

 d) Nature of the study was not causing any harm for the entire shamble harm   for the entire sample.

 e) Confidentiality and privacy were taken into consideration regarding data   collection.

3. Tools of data collection were developed and translated into Arabic by the researcher based on recent literature review.

4. The study, s questionnaire was translated into Arabic and presented to a jury of five experts in the area of specialty to check the face validity. Necessary modifications were made including clarification, simplifying certain words, excluding certain items and adding other

5. The face and content validity of tool (I) part (3) that entitled utilization of evidence's sources was 89.3%, while the face and content validity of tool II that named nurse managers' opinions about evidence-based nursing management questionnaire was 87.1%.

6. Suitable statistics test was used to test the tools for its reliability of tools were tested using Cronbach's Alpha test. The reliability of Tool (I) part (3) that entitled utilization of evidence's sources was 0.892 and 0.873 for tool II that named nurse managers' opinions about evidence-based nursing management questionnaire.

7. A pilot study was carried out by the researcher on (10%) of nurse managers (n=16). According to feedback from pilot study, the tools were modified by the researcher. The estimated time needed to complete the questionnaire items from nurse manger 15-20 minutes.

8. Data collection phase: the data was collected from nurse managers by researcher. Who met them in different areas under the study during working hours to distribute the questionnaire. The nurse manager recorded their answers in the presence of a researcher to ascertain that all

questions were answered. The data was collected over period six months starting from the beginning of January2023 until the end of June 2023.

Statistical analysis of the data

Data was fed to the computer and analyzed using IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp) Qualitative data were described using number and presenting. The Kolmogorov-Smirnov test was used to verify the normality of distribution Quantitative data were described using range (minimum and maximum), mean, standard deviation, median and. Significance of the obtained results was judged at the 5% level. The used tests were Chi-square test for categorical variables, to compare between different groups, Monte Carlo correction, correction for chi-square when more than 20% of the cells have expected count less than 5 ,Student t-test for normally distributed quantitative variables, to compare between two studied groups and Mann Whitney test for abnormally distributed quantitative variables, to compare between two studied groups.

Results

Table (1): Shows nurse managers personal characteristics. The table shows that nearly half (47.2%) of nurse mangers were age group 30-<40 with a mean score (37.96 ± 7.0). The majority (80.5%, 84.3%) of nurse managers were female and married respectively. The highest percentage (28.9%) of nurse managers worked at intensive care unit and 60.4% of them were head nurses. Moreover, around half (50.3%) of nurse managers had postgraduate studies in nursing, and 42.7% of them had less than five years of experience with a mean score (5.50 ± 3.23). Moreover, 59.8%of nurse managers did not attend a training program related to evidence-based nursing management.

Table (2): Shows levels of nurse manager's perception about evidence-based nursing management knowledge dimensions. The table reveal that according to the dimensions of knowledge of evidence-based nursing

management, in total the majority (67.9%) of nurse managers had high levels of knowledge according to concept of evidence-based nursing management and followed by it's important (61.0%), In addition around half (45.9%, 41.5%) of nurse managers had moderate level of knowledge according to facilitator and barrier of evidence-based nursing management, respectively. There were significant differences between four hospitals about levels of process of evidence-based nursing management. In Kafr El-Shiekh University hospital and Kafr El-Shiekh General hospital 84.4%, 78.8% had poor levels about its process while International Teaching Hospital nearly half (48.8%) had poor levels about the process of evidence-based nursing management, but 31.7% of them had moderate levels. While El Minshawi General hospital half (50%) of them had poor levels and 45% had moderate level of knowledge about process of evidence-based nursing management.

Figure (1): Shows levels of nurse manager's utilization of evidence's sources. The majority (74.8%) of nurse managers had moderate utilize of evidence's sources. The highest percentage (84.8%) of utilization to evidence's sources was at Kafr El-Shiekh General hospital followed by El Minshawi General Hospital and International Teaching Hospital 75%, 73.2% respectively. The lowest percentage (68.9%) of utilization to evidence's sources at Kafr El-Shiekh University hospital.

Table (3): Shows comparison between the nurse managers according to their level of utilization of evidence's sources dimensions. The majority (66.0%) of nurse managers had moderate levels of utilization to facts and information of hospital as an evidence's sources followed by 57.9% and 55.3%, for political-social development plans and ethical-moral evidence value as an evidence's sources respectively. The lowest percentage (31.4%) of them had moderate level of utilization for scientific and research evidence. There was significant difference between El Minshawi

General hospital & Kafr El-Shiekh General hospital in all dimensions of utilization except political-social development plans as a evidence's sources. The highest significant was for managers' professional expertise at El Minshawi General hospital, which nurse managers had high levels (65.0%) of utilization of evidence's sources, while at Kafr El-Shiekh hospital nurse managers had low level (48.5%) of utilization of evidence's sources. The lowest significant was for scientific and research evidence at El Minshawi General hospital who the majority (72.5%) of nurse managers had low level of utilization of evidence's sources, while at Kafr El-Shiekh General hospital (42.4%) of nurse manager had moderate level to utilization of evidence's sources.

Table (4): Shows comparison between the nurse manager opinions in different hospitals according to mean of evidence based –nursing management barriers dimensions. In total the highest mean score of nurse managers 76.73 ± 19.96 for teamwork factors as barriers of evidence based –nursing management followed by 71.28 ± 19.30 and 68.45 ± 22.08 for organizational factors and training and research systems as barriers of evidence based –nursing management. While the lowest mean score of nurse managers 57.51 ± 22.31 for nurse managers' characteristics as a barrier of evidence based -nursing management. The table clear that there were significant differences at International Teaching hospital and Kafr El-Shiekh University hospital in all dimensions. Teamwork factors was first ranking in all hospitals followed by organizational factors was second ranking at all hospitals except International Teaching hospital it was third ranking. While decision-making, environmental and training and research systems were third ranking in the total of dimensions of evidence-based nursing management barriers. Also, decision-making environmental was third ranking in all hospitals except International Teaching hospital it was fourth ranking and training, and research

systems was fourth ranking in all hospitals except International Teaching hospital it was second ranking. The nurse managers' characteristics were fifth ranking at all hospitals.

Table (5): Shows comparison between the nurse managers opinions in different hospitals according to mean of evidence based –nursing management facilitator dimensions. In total nurse managers the highest mean 78.51 ± 16.86 of their opinion was for teamwork factors as a facilitator of evidence based –nursing management followed by 73.58 ± 19.59 and 73.01 ± 18.24 for training and research systems and organizational factors respectively. While the lowest mean 64.86 ± 16.64 of nurse managers opinion was for nurse managers' characteristics as a facilitator of evidence based –nursing management. The table clear that there were significant differences at p1= 4.787 also in training and research systems at p1 = 2.176. The total teamwork factors was first ranking in all hospitals except Kafr El-Shiekh University hospital was third ranking followed by training and research systems was second ranking in all hospitals except El Minshawi General hospital was third ranking. While decision-making environment was fourth ranking and nurse managers' characteristics was fifth ranking in total and all hospitals.

Table (6): Represented relation between level of nurse manager utilization of evidence sources and their knowledge of evidence based-nursing management in total University hospitals and total Ministry of Health hospitals. The table reveal that significant different relation between nurse manager's utilization of evidence sources and their knowledge of evidence based-nursing management in total Ministry of Health hospitals r = 0.351*. While no significant different relation between nurse manager's utilization of evidence sources and their knowledge of evidence based-nursing management in total University hospitals r =0.020*.

Table (1): Nurse Manager's personal data (n=159)

Nurse manager's personal data	Total (n = 159)		International Teaching Hospital (n =41)		Kafr El-Shiekh University Hospital (n =45)		El Minshawi General Hospital (n =40)		Kafr El-Shiekh General Hospital (n =33)	
	No.	%	No.	%	No.	%	No.	%	No.	%
Age										
<30	22	13.8	2	4.9	19	42.2	0	0.0	1	3.0
30-<40	75	47.2	16	39.0	24	53.3	16	40.0	19	57.6
40-<50	45	28.3	15	36.6	2	4.4	19	47.5	9	27.3
≥50	17	10.7	8	19.5	0	0.0	5	12.5	4	12.1
Min. – Max.	26.0 – 55.0		27.0 – 55.0		26.0 – 44.0		30.0 – 50.0		29.0 – 54.0	
Mean ± SD.	37.96 ± 7.0		40.90 ± 7.09		31.71 ± 4.38		40.35 ± 5.58		39.94 ± 6.15	
Sex										
Male	31	19.5	6	14.6	14	31.1	5	12.5	6	18.2
Female	128	80.5	35	85.4	31	68.9	35	87.5	27	81.8
Marital status										
Married	134	84.3	38	92.7	29	64.4	38	95.0	29	87.9
Unmarried	25	15.7	3	7.3	16	35.6	2	5.0	4	12.1
Departments name										
Medical	28	17.6	6	14.6	8	17.8	9	22.5	5	15.2
Surgical	19	12.0	5	12.2	5	11.1	5	12.5	4	12.1
Pediatric	25	15.7	5	12.2	10	22.2	5	12.5	5	15.2
Ophthalmology	5	3.1	1	2.4	4	8.9	0	.0	0	.0
Urology	18	11.3	5	12.2	2	4.4	7	17.5	4	12.1
Cardiology	18	11.3	6	14.6	4	8.9	5	12.5	3	9.1
Intensive care unit	46	28.9	13	31.7	12	26.7	9	22.5	12	36.4
Position										
Head nurse	96	60.4	23	56.1	29	64.4	28	70.0	16	48.5
Supervisor	51	32.1	14	34.1	13	28.9	9	22.5	15	45.5
Matron	12	7.6	4	9.8	3	6.7	3	7.5	2	6.1
Educational qualification										
Bachelor of science nursing	79	49.7	16	39.0	30	66.7	22	55.0	11	33.3
Postgraduate in nursing	80	50.3	25	61.0	15	33.3	18	45.0	22	66.7
Years of experience										
<5	75	47.2	13	31.7	32	71.1	16	40.0	14	42.4
5-<10	61	38.4	19	46.3	12	26.7	15	37.5	15	45.5
≥10	23	14.5	9	22.0	1	2.2	9	22.5	4	12.1
Min. – Max.	1.0 – 15.0		1.0 – 15.0		1.0 – 10.0		2.0 – 14.0		1.0 – 15.0	
Mean ± SD.	5.50 ± 3.23		6.44 ± 3.46		3.69 ± 2.11		6.45 ± 3.37		5.64 ± 3.10	
Attending the educational programs										
Yes	64	40.3	12	29.3	21	46.7	11	27.5	20	60.6
No	95	59.8	29	70.7	24	53.3	29	72.5	13	39.4

Table (2): Levels of nurse manager's perception about evidence-based nursing management knowledge dimensions

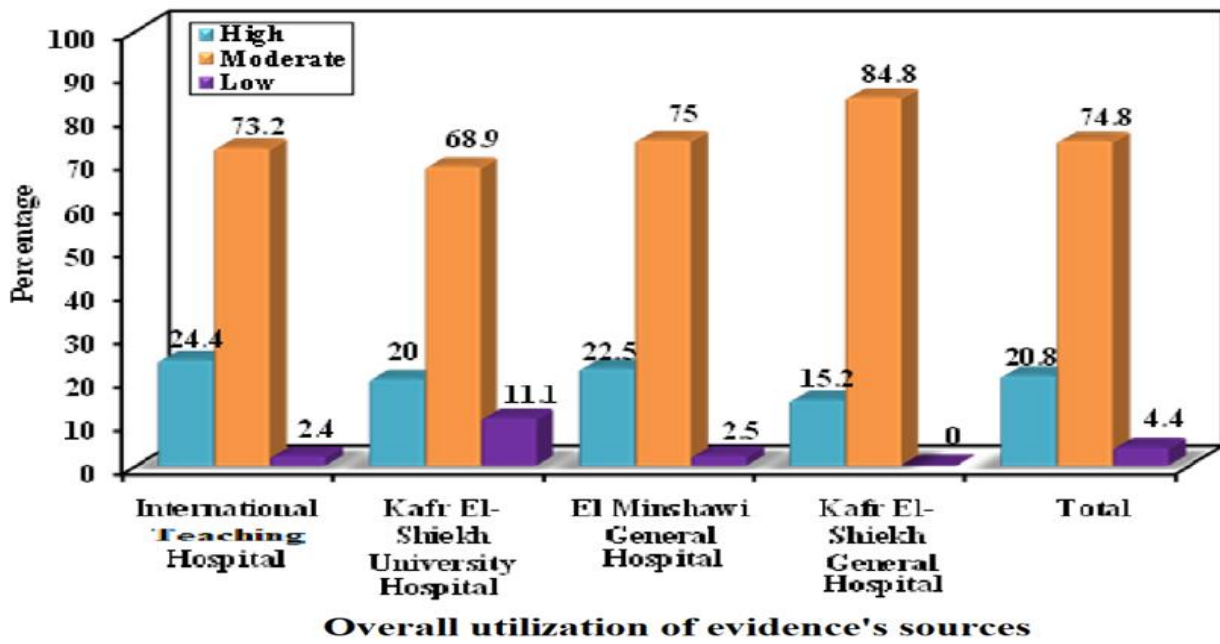| Dimensions of evidence-based nursing management knowledge	Total (n = 159)		International Teaching Hospital (n =41)		Kafr El-Shiekh University Hospital (n =45)		El Minshawi General Hospital (n =40)		Kafr El-Shiekh General Hospital (n =33)		χ^2 (p₁)	χ^2 (p₂)
	No.	%	No.	%	No.	%	No.	%	No.	%		
Concepts												
High	108	67.9	24	58.5	33	73.3	27	67.5	24	72.7	2.102 (0.147)	0.235 (0.628)
Moderate	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0		
Poor	51	32.1	17	41.5	12	26.7	13	32.5	9	27.3		
Importance												
High	97	61.0	25	61.0	34	75.6	22	55.0	16	48.5	2.117 (0.146)	0.308 (0.579)
Moderate	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0		
Poor	62	39.0	16	39.0	11	24.4	18	45.0	17	51.5		
Sources												
High	46	28.9	12	29.3	10	22.0	13	32.5	11	33. 3	1.718 (0.424)	1.990 (0.370)
Moderate	56	35.2	18	43.9	17	37.8	14	35.0	7	21.2		
Poor	57	35.8	11	26.8	18	40.0	13	32.5	15	45.5		
Barriers												
High	31	19.5	10	24.4	9	20.0	9	22.5	3	9.1	0.674 (0.714)	4.469 (0.107)
Moderate	66	41.5	13	31.7	18	40.0	15	37.5	20	60.6		
Poor	62	39.0	18	34.9	18	40.0	16	40.0	10	30.3		
Facilitators												
High	14	8.8	5	12.2	4	8.9	4	10.0	1	3.0	5.950 (MCp=0.050)	1.309 (MCp= 0.541)
Moderate	73	45.9	23	56.1	15	33.3	19	47.5	16	48.5		
Poor	72	45.3	13	31.7	27	57.8	17	42.5	16	48.5		
Process												
High	11	6.9	8	19.5	1	202	2	5.0	0	0.0	13.363* (MCp= 0.001*)	6.576* (MCp= 0.018*)
Moderate	44	27.7	13	31.7	6	13.3	18	45.0	7	21.2		
Poor	104	65.4	20	48.8	38	84.4	20	50.0	26	78.8		
Overall												
High	6	3.8	4	9.8	1	2.2	1	2.5	0	0.0	χ^2=7.060* (MCp= 0.020*)	χ^2=1.023 (MCp= 0.890)
Moderate	96	60.4	26	63.4	20	44.4	28	70.0	22	66.7		
Poor	57	35.8	11	26.8	24	53.3	11	27.5	11	33.3		

Figure (1): Levels of nurse manager's utilization of evidence's sources

Table (3): Comparison between the nurse managers according to their levels of utilization of evidence's sources dimensions

Dimension of Evidence's Sources	Total (n = 159)		International Teaching Hospital (n =41)		Kafr El-Shiekh University Hospital (n =45)		El Minshawi General Hospital (n =40)		Kafr El-Shiekh General Hospital (n =33)		χ^2 (p1)	χ^2 (p2)
	No.	%	No.	%	No.	%	No.	%	No.	%		
Scientific and research evidence												
High	20	12.6	4	9.8	9	20.0	1	2.5	6	18.2	5.935 (0.051)	9.536* (0.009*)
Moderate	50	31.4	9	22.0	17	37.8	10	25.0	14	42.4		
Low	89	56.0	28	68.3	19	42.2	29	72.5	13	39.4		
Facts and information of hospital												
High	31	19.5	7	17.1	6	13.3	3	7.5	15	45.5	0.594 (0.743)	17.054* (^{MC}p= <0.001*)
Moderate	105	66.0	25	61.0	31	68.9	31	77.5	18	54.5		
Low	23	14.5	9	22.0	8	17.8	6	15.5	0	0.0		
Political-social development plans												
High	56	35.2	8	19.5	12	26.7	17	42.5	19	57.6	2.505 (0.286)	2.162 (^{MC}p= 0.296)
Moderate	92	57.9	30	73.2	26	57.8	22	55.0	14	42.4		
Low	11	6.9	3	7.3	7	15.6	1	2.5	0	0.0		
Managers' professional expertise												
High	58	36.5	15	36.6	12	26.7	26	65.0	5	15.2	2.822 (^{MC}p= 0.255)	24.670* (<0.001*)
Moderate	77	48.4	25	61.0	28	62.2	12	30.0	12	36.4		
Low	24	15.1	1	2.4	5	11.1	2	5.0	16	48.5		
Ethical-moral evidence and values												
High	34	21.4	14	34.1	5	11.1	12	30.0	3	9.1	6.614* (0.037*)	14.182* (0.001*)
Moderate	88	55.3	21	51.2	31	68.9	23	57.5	13	39.4		
Low	37	23.3	6	14.6	9	20.0	5	12.5	17	51.5		
Values and expectations of all stakeholders												
High	32	20.1	9	22.0	9	20.0	11	27.5	3	9.1	2.759 (0.252)	12.992* (0.002*)
Moderate	58	36.5	17	41.5	12	26.7	20	50.0	9	27.3		
Low	69	43.4	15	3636	24	53.3	9	22.5	21	51.5		
Overall Utilization												
High	33	20.8	10	24.4	9	20.0	9	22.5	5	15.2	χ^2= 2.406 (^{MC}p= 0.354)	χ^2=1.473 (^{MC}p= 0.555)
Moderate	119	74.8	30	73.2	31	68.9	30	75.0	28	84.8		
Low	7	4.4	1	2.4	5	11.1	1	2.5	0	0.0		

Table (4): Comparison between the nurse manager's opinions in different hospitals according to mean of evidence based –nursing management barriers dimensions

Dimensions of evidence-based nursing management barriers	Total (n = 159)	International Teaching Hospital (n =41)	Kafr El-Shiekh University Hospital (n =45)	El Minshawi General Hospital (n =40)	Kafr El-Shiekh General Hospital (n =33)	t (p₁)	t (p₂)
Nurse managers' characteristics Min. – Max. Mean ± SD.	0.0 – 100.0 57.51 ± 22.31	18.75 – 93.75 58.84 ± 18.27	0.0 – 87.50 43.47 ± 23.87	12.50 – 93.75 63.28 ± 17.40	0.0 – 100.0 67.99 ± 21.30	3.369* (0.001*)	1.040 (0.302)
Rank	**5**	**5**	**5**	**5**	**5**		
Decision-making environmental Min. – Max. Mean ± SD.	0.0 – 100.0 68.45 ± 19.31	25.0 – 100.0 72.76 ± 18.26	0.0 – 91.67 57.04 ± 23.57	41.67 – 100.0 71.25 ± 13.99	33.33 – 100.0 75.25 ± 12.58	3.435* (0.001*)	1.273 (0.207)
Rank	**3**	**4**	**3**	**3**	**3**		
Training and research systems Min. – Max. Mean ± SD.	0.0 – 100.0 68.45 ± 22.08	25.0 – 100.0 77.03 ± 17.46	0.0 –100.0 56.85 ± 28.16	33.33 – 91.67 68.12 ± 17.18	16.67 –100.0 73.99 ± 16.10	4.031* (<0.001*)	1.493 (0.140)
Rank	**3**	**2**	**4**	**4**	**4**		
Organizational factors Min. – Max. Mean ± SD.	0.0 – 100.0 71.28 ± 19.30	33.33 – 100.0 73.78 ± 16.20	0.0 – 100.0 60.37 ± 25.26	41.67 – 91.67 74.58 ± 12.37	33.33 – 100.0 79.04 ± 13.99	2.956* (0.004*)	1.444 (0.153)
Rank	**2**	**3**	**2**	**2**	**2**		
Team work factors Min. – Max. Mean ± SD.	0.0 – 100.0 76.73 ± 19.96	25.00 – 100.0 83.54 ± 14.49	0.0 – 100.0 62.59 ± 27.04	66.67 – 100.0 83.54 ± 9.89	41.67 – 100.0 79.29 ± 13.20	4.531* (<0.001*)	1.571 (0.121)
Rank	**1**	**1**	**1**	**1**	**1**		
Overall opinions barriers Min. – Max. Mean ± SD.	0.0 – 90.63 67.80 ± 16.60	25.0 – 85.94 72.29 ± 11.05	0.0 – 87.50 55.28 ± 22.59	50.0 – 85.94 71.60 ± 7.90	31.25 – 90.63 74.67 ± 10.77	4.496* (<0.001*)	1.402 (0.165)

Table (5): Comparison between nurse managers opinion in different hospitals according to mean of evidence based –nursing management facilitator dimensions

Dimensions of evidence-based nursing management facilitator	Total (n = 159)	International Teaching Hospital (n =41)	Kafr El-Shiekh University Hospital (n =45)	El Minshawi Genera Hospital (n =40)	Kafr El-Shiekh General Hospital (n =33)	t (p₁)	t (p₂)
Nurse managers' characteristics Min. – Max. Mean ± SD.	0.0 – 100.0 64.86 ± 16.64	25.0 – 93.75 62.65 ± 16.03	0.0 – 87.50 60.0 ± 18.86	25.0 – 93.75 67.03 ± 14.57	37.50 –100.0 71.59 ± 14.33	0.699 (0.486)	1.341 (0.184)
Rank	5	5	5	5	5		
Decision-making environmental Min. – Max. Mean ± SD.	0.0 – 100.0 68.03 ± 19.23	25.0 – 100.0 69.31 ± 21.92	0.0 – 83.33 62.04 ± 20.30	33.33 – 100.0 68.54 ± 17.04	33.33 – 100.0 73.99 ± 14.70	1.597 (0.114)	1.446 (0.153)
Rank	4	4	4	4	4		
Training and research systems Min. – Max. Mean ± SD.	0.0 – 100.0 73.58 ± 19.59	50.0 – 100.0 77.13 ± 16.51	0.0 – 100.0 67.22 ± 25.18	37.50 – 100.0 74.06 ± 17.08	25.0 – 100.0 77.27 ± 15.45	2.176* (0.033*)	0.834 (0.407)
Rank	2	2	2	3	2		
Organizational factors Min. – Max. Mean ± SD.	0.0 – 100.0 73.01 ± 18.24	33.33 – 100.0 73.78 ± 15.32	0.0 – 100.0 68.15 ± 21.64	33.33 – 100.0 74.17± 17.98	33.33 – 91.67 77.27 ± 16.04	1.403 (0.165)	0.771 (0.443)
Rank	3	3	1	2	2		
Team work factors Min. – Max. Mean ± SD.	0.0 – 100.0 78.51 ± 16.86	58.33 – 100.0 84.76 ± 11.62	0.0 – 100.0 66.85 ± 21.94	58.33 – 100.0 82.08 ± 11.87	58.33 – 100.0 82.32 ± 11.36	4.787* (<0.001*)	0.088 (0.930)
Rank	1	1	3	1	1		
Overall opinions facilitator Min. – Max. Mean ± SD.	0.0 – 93.33 71.02 ± 12.42	48.33 – 85.0 72.56 ± 8.83	0.0 – 85.0 64.37 ± 17.92	53.33 – 90.0 72.71 ± 7.50	55.0 – 93.33 76.11 ± 7.65	2.725* (0.008*)	1.913 (0.060)

Table (6): Correlation between nurse manager's utilization of evidence sources and their knowledge of evidence based-nursing management in total University hospitals and total Ministry of Health hospitals

		Utilization	
		Total University hospitals (n =86)	**Total Ministry of Health hospitals (n =73)**
Knowledge	**r**	0.020	0.351*
	P	0.856	0.002*

Discussion

Concerning levels of the nurse managers' knowledge regard to evidence-based nursing management, the present study results revealed that the majority of the overall nurse managers had moderate level of knowledge regarding evidence-based nursing management. This result may be due to the highest percent of nurse managers had postgraduate studies in nursing which supported their knowledge regarding evidence-based research process.

These results were agreed with **Çelikkanat and Güngörmüş (2023)** who indicated that nurse managers had moderate mean scores regarding knowledge about evidence-based management. Also, the current finding is consistent with **Djukic, Jun and Fletcher (2021)** who reported that most nurse managers had moderate level of knowledge about evidence-based management. In addition, the present results agreed with **Jun ,Kovner , Dickson, Stimpfel andRosenfeld (2020**) who found that nurse managers had moderate level of knowledge regarding evidence-based nursing management. However, the current results were not consistent with, **Ahmed,Abdelwahab and Mohamed (2020)** who revealed that nurse managers' knowledge level was lower due to lack of training on evidence-based management, which effect negatively on their practice of evidence-based decision-making.

These results were disagreed with **Ellboudy, Eid and Rashad (2018); Rockette (2021)** they reported that the highest mean of nurse managers had low knowledge level about evidence-based management. Also, the result of **Mohamed , Alhujaily ,Ahmed,Nouh and Almowafy (2024)** study stated that nurse managers had limited awareness of evidence-based decision making due to the lack of educational programs on evidence-based management for nurse managers.

The current study results elaborated that the highest percent of the nurse managers had moderate utilize of evidence's sources. This result may be due to the interest of nursing managers in searching for policies and regulations resources because of its positive effect on managerial decision-making related to their work.

These findings were confirmed by **Couwenberg (2021)** who suggested that role of nurse managers as a policy maker considered as an important factor for evidence sources utilization. Also, **Dereje ,Hailu and Beharu (2019); Lamesa,Seifu, Abdella and Ezo (2023** asserted that the role of the nurse managers in the hospital was associated with the utilization of evidence resources and most of nurse managers were more likely to utilize evidence resources compared to staff nurses and this related to having opportunities for nurse mangers to take workshops and training about evidences sources utilization.

The current findings showed that the highest percentage of evidence sources utilization was among the nurse managers at Kafr El-Shiekh General hospital. This result may be due to the highest percentage of the nurse managers at Kafr El-Shiekh General hospital were have years of experiences, had post graduate nursing education, and attending a training program related to evidence-based nursing management.

The current findings confirmed by **Dereje et al., (2019) ; Hoyiso , Arega and Markos (2018)** who asserted that younger nurse managers are better at valuing evidence-based management and elders were tending to use self-experience. In addition, **Dereje et al., (2019)** found that training about evidence-based management was significantly associated with the utilization of evidence sources and thay was observed that nurse mangers who attend evidence-based management training either as part of their curriculum or separately are more likely to have good evidence sources utilization compared to those who do not attend it.

The present study revealed that the majority of nurse managers had high scores regarding opinions about evidence-based nursing management barriers. According to overall mean of evidence-based nursing management barriers, the present findings revealed that the highest mean score of nurse manager's opinions about evidence-based nursing management barriers was at Kafr El-Shiekh General hospital and followed by International Teaching Hospital and El Minshawi General hospital. This result may be due to these hospitals having the highest percent of the nurse managers had postgraduate studies in nursing, which increase their awareness regarding evidence-based nursing management.

This finding supported by the studies by **Asi Karakaş ,Sahin Altun,Polat and Ozturk (2021) ; Bergström et al., (2020)** who found that there was positive relation between nurse managers educational qualification and their perception regarding evidence-based nursing management barriers. Moreover, nurse managers tend to have high perception if they had higher education level and on-job education.

Concerning nurse managers' opinions in evidence based –nursing management barriers dimensions, the current study results revealed that the highest mean was regarding the teamwork factor. These results may be due to resistance of the teamwork to use of evidence sources, and lake of support from professional colleagues in nursing scientific research. This finding agreed with **Naghibi, Mohammadzadeh and Azami-Aghdash (2021)** found that nurse managers identified that teamwork support was the most barrier of evidence-based management. Also, the current findings consistent with **Khoi ,Quan and Liamputtong (2023)** they reported that a major repetitive barrier to evidence-based management was the lack of support which can come from colleagues, supervisors,

managers, and at higher levels, from policymakers.

The present study revealed that most nurse manager had high mean score regarding opinions about evidence-based nursing management facilitators. The current study results revealed that the highest mean score of nurse manager opinion about evidence-based nursing management facilitator was the majority of the nurse managers in Ministry of Health and Population hospitals. This may be due to the highest percentage of them attending the in-service educational programs about the role of nurse managers in Ministry of Health and Population hospitals.

These results were supported by **Aslan and Gürdap (2021)** who reported that the highest percentage of the nurse managers had satisfactory perception regarding evidence-based management facilitator post-educational training. Also, the present results agreed with **Kılıç and Celen (2024)** who found that the educational training related to evidence-based management had positive effect on nurse managers opinions regarding evidence-based management facilitators. In addition, the current findings consistent with **Ceylan and Demir (2022)** they revealed that nurse managers cannot follow evidence-based management recommendations due to lack of educational training programs, lack of access to guidelines and the literature. All this reasons, ensuring that nurse managers with sufficient knowledge and knowing how to access information may facilitate their access and tendency to use evidence-based nursing management.

The present results revealed that there was significant positive correlation between overall knowledge of evidence-based nursing management and overall utilization of evidence sources in Ministry of Health and Population hospitals. This result indicated the importance of developing and increasing the nurse managers' knowledge about evidence based-nursing management process to

motivate them for utilization of evidence sources.

Theis results agreed with **Ellboudy et al., (2018)** who reported that the nurse managers' knowledge had positive effect on their using of evidence sources. Also, the present findings in the same line with **Välimäki et al., (2021)** who concluded that there is a primary need for improving the knowledge level of all nurse managers regarding the evidence-based management process and utilization to increase the use of sources of evidence. Also, the current results agreed with **Ruzafa-Martínez Fernandez-Salazar, Leal-Costa and Ramos-Morcillo (2024)** who clarified that mangers knowledge effect utilization of evidence-based management sources and process. In addition, the present results consistent with **Hasanpoor, Hallajzadeh, Siraneh, Hasanzadeh and Haghoshayie (2020)** who found that there was strong significant relation between nurse managers knowledge regarding evidence-based management and their utilization of resources in decision making process. Moreover, **Aynalem et al., (2021)** concluded that having good knowledge about evidence-based nursing management was two times more likely to have good evidence sources utilization compared to having poor knowledge about evidence-based nursing management. In addition, the possible explanation for this could be knowledge about evidence-based nursing management may increase their appraisal skills and give more confidence in utilizing evidence sources.

Conclusion

Based on the findings of the present study, it was concluded that the majority of nurse managers had a moderate level of overall knowledge about evidence-based nursing management, and had a moderate utilization level of evidence sources. The majority of nurse managers identified that the teamwork factor was the most common frequent barrier and facilitator at the same time. Also, there was a significance positive correlation between levels of nurse manager's knowledge of evidence based-nursing management, and their level of utilization of evidence sources at Ministry of Health and Population Hospitals.

Recommendations

- Hospital administrators encourage and support nurse managers to attendance scientific research and conference.
- Nurse manager initiates training program about evidence based-nursing management process application.
- Nurse managers ensure the evidence sources is available and accessible to utilize in decision-making process.
- Nursing staff alert with expectation and value of stakeholders about health care organization and utilization this expectation in improving evidence based –nursing management application in health care organization.

References

Ahmed, R. M., Abdelwahab, E. A., & Mohammed, S. A. (2020). Effect of evidence-based nursing training program on head nurses' knowledge, practice, and attitudes. *SYLWAN, 164*(3)2-6.

Alharbi, A., Rasmussen, P., & Magarey, J. (2022). Clinical nurse managers' leadership practices in Saudi Arabian hospitals: A descriptive cross-sectional study. *Journal of Nursing Management, 29*(6), 1454-64.

Alsubaie, N., & Bugis, B. (2021). The attitudes and perceived barriers regarding the practice of evidence-based management among healthcare managers in Saudi Arabia. *Internet Journal of Allied Health Sciences and Practice, 19*(2), 6.

Asl, I. M., Hasanzadeh, E., & Raeissi, P. (2021). Determining the sources of evidence used in decision making of staff managers in Iran University of Medical Sciences. *Journal of Health Administration, 23*(4), 61-69.

Aslan, H., & Gürdap, Z. (2021). Nurses' attitudes towards evidence-based nursing and their knowledge levels to prevent infection associated

with peripheral venous catheter. *The Journal of Turkish Family Physician, 12*(2), 84-98.

Aynalem, Z. B., Yazew, K. G., & Gebrie, M. H. (2021). Evidence-based practice utilization and associated factors among nurses working in Amhara Region Referral Hospitals. *Ethiopia. Plos One, 16*(3), e0248834.

Ayoubian, A., Nasiripour, A. A., Tabibi, S. J., & Bahadori, M. (2020). Evaluation of facilitators and barriers to implementing evidence-based practice in the health services: A systematic review. *Galen Medical Journal, 9*(14), e1645. https://doi.org/10.31661/gmj.v9i0.1645.

Azar, S., Alolayyan, M. N., & Alyahya, M. (2023). Exploring the intentions of hospital managers to use evidence-based management in decision-making process. *International Journal of Healthcare Management, 6*(16), 1-8. https://doi.org/10.1080/20479700.2023.2204559.

Baniomar, A. Y., & Obeidat, R. (2021). Organizational Context and Relationship with First-Line Nurse Managers' Implementation Leadership and Attitudes toward Evidence Based Practice in Jordanian Hospitals, Unpublished Master's Thesis. Zarqa University, Zarqa. Retrieved from: http://search.mandumah.com/Record/1371590.

Belita E, Squires E, Yost J, Ganann R, Burnett T& Dobbins M. (2020). Measures of evidence-informed decision-making competence attributes: Apsychometric systematic review. *BMC Nursing,19*(44), 1-28.

Bergström, A., Ehrenberg, A., Eldh, A. C., Graham, I. D., Gustafsson, K., Harvey, G., ... & Wallin, L. (2020). The use of the PARIHS framework in implementation research and practice—A citation analysis of the literature. *Implementation Science, 15*(68), 1-51.

Çelikkanat, Ş., & Güngörmüş, Z. (2023). Turkish psychometric properties of the nurse manager Evidence-Based Practice Competency Scale. *Nursing Economics, 41*(6), 279-289.

Ceylan, E., & Demir, M. (2022). The relationship between nurses' individual innovativeness and attitudes towards evidence-based nursing: A cross-sectional descriptive study in Turkey. *International Journal of Caring Sciences, 15*(2), 1465-1475.

Couwenberg, S. (2021). Characteristics of evidence in the eyes of the policy maker: What makes scientific knowledge evidence. Master's Thesis, Faculty of Behavior, Management and Social Science, University of Twente.

Daouk-Öyry, L., Sahakian, T., & van de Vijver, F. (2021). Evidence-based management competency model for managers in hospital settings. *British Journal of Management, 32*(4), 1384-1403.

Dereje B, Hailu E, Beharu, M. (2019). Evidence-based practice utilization and associated factors among nurses working in Public Hospitals of Jimma Zone Southwest Ethiopia: A cross sectional study. *Adv Pharmacoepidemiol Drug Saf, 7*(1), 321. doi: 10.24105/2327-5146.7.321

Djukic, M., Jun, J., & Fletcher, J. (2021). An examination of the factors associated with implementation of evidence-based management practices for improving nurse work environments. *Worldviews on Evidence‐Based Nursing, 18*(2), 129-137.

Ellboudy, D., Eid, N., & Rashad, Z. (2018). Nurse managers' perceived knowledge and skills regarding evidence-based nursing practice. *Menoufia Nursing Journal, 3*(2), 37-47.

González García, A., Pinto-Carral, A., Sanz Villorejo, J., & Marqués-Sánchez, P. (2020). Nurse manager core competencies: A proposal in the Spanish health system. *International Journal of Environmental Research and Public Health, 17*(9), 3173.

Guo R, Berkshire D, Fulton V, & Hermanson P. (2017). Use of evidence-based management in healthcare administration decision-making. *Leadership in Health Services, 3*(30), 10. 1108/LHS-07-2016-0033

Guo R, Hermanson M, & Farnsworth J. (2016). Study on hospital Administrators' beliefs and attitudes toward the practice of evidence-based management. *International Journal of Caring Sciences, 2*(94), 3-4, 62-66.

Haghgoshayie, E., & Hasanpoor, E. (2021). Evidence-based nursing management: Basing organizational practices on the best available evidence. *Creative Nursing, 27*(2), 94-97.

Hasanpoor, E., Hallajzadeh, J., Siraneh, Y., Hasanzadeh, E., & Haghgoshayie, E. (2020). Using the methodology of systematic review of reviews for evidence-based medicine. *Ethiopian Journal of Health Sciences, 29*(6), 102-113.

Hasanpoor, E., Siraneh Belete, Y., Janati, A., Hajebrahimi, S., & Haghgoshayie, E. (2019). Nursing managers' perspectives on the facilitators and barriers to implementation of evidence-based management. *Worldviews on Evidence -Based Nursing, 16*(4), 255-262.

Hoyiso, D., Arega, A., & Markos, T. (2018). Evidence based nursing practice and associated factors among nurses working in Jimma zone public hospitals, Southwest Ethiopia. *International Journal of Nursing and Midwifery, 10*(5), 47-53.

Jun, J., Kovner, C. T., Dickson, V. V., Stimpfel, A. W., & Rosenfeld, P. (2020). Does unit culture matter? The association between unit culture and the use of evidence-based practice among hospital nurses. *Applied Nursing Research: ANR, 53*(5), 151251.

Khoi Quan, N., & Liamputtong, P. (2023). Systematic Review and Evidence Synthesis in Public Health. Handbook of Social Sciences and Global Public Health. Springer, Cham. https://doi.org/10.1007/978-3-03096778-9-143-1.1-25.

Kılıç, H. K., & Celen, R. (2024). Knowledge levels and evidence-based approaches of undergraduate nursing students on suctioning practices: A cross-sectional study. *Nurse Education Today, 134*(2), 106097.

Krah, N. S., Zietzsch, P., Salrach, C., Toro, C. A., Ballester, M., Orrego, C., & Groene, O. (2023). Identifying factors to facilitate the implementation of decision-making tools to promote self-management of chronic diseases into routine healthcare practice: A qualitative study. *MDPI Healthcare, 11*(17), 2397.

Lamesa, D., Seifu, W., Abdella, J., & Ezo, E. (2023). Utilization of evidence-based Nursing practice and associated factors among nurses working in Saint Paul's Hospital Millennium Medical College, Ethiopia. *SAGE Open Nursing, 9*(2), 1-8.

Majers, J. S., & Warshawsky, N. (2020). Evidence-based decision-making for nurse leaders. *Nurse Leader, 18*(5), 471-475.

Mohamed, R. A.,& Alhujaily, M., Ahmed, F. A., Nouh, W. G., & Almowafy, A. A. (2024). Nurses' experiences and perspectives regarding evidence-based practice implementation in healthcare context: A qualitative study. *Nursing Open, 11*(1), e2080.

Naghibi, D., Mohammadzadeh, S., & Azami-Aghdash, S. (2021). Barriers to evidence-based practice in health system: A systematic review. *Evidence Based Care, 11*(2), 74-82.

Ofei M, Paarima Y, & Barnes T. (2020). Exploring the management competencies of nurse managers in the Greater Accra Region, Ghana. *International Journal of Africa Nursing Sciences. 13*(100248): 1-10.

Rockette, E. D. (2021). Exploring frontline care management organization leaders' evidence-based practice implementation and facilitation strategies: A qualitative descriptive study. Available from ProQuest Dissertations & Theses Global. (2604878222). Retrieved from; https://www.proquest.com/dissertations-theses/exploring-frontline-care-management-organization/docview/2604878222/se-2.

Ruzafa-Martínez, M., Fernández-Salazar, S., Leal-Costa, C., & Ramos-Morcillo, A. J. (2024). Determinants of Evidence Implementation by Nurses: Evidencer Model for the Use of Evidence-Based Practice—A Structural Equation Model. *Journal of Nursing Management, 2*(1), 1-13.

Rylee, T. L., & Cvanagh, S. J. (2023). Innovation in Nursing p69ractice: A Scoping Review. *Advances in Nursing Science, 46*(4), E115-E131.

Sallam, M., Snygg, J., & Sallam, M. (2024). Assessment of Artificial Intelligence credibility in evidence-based healthcare management with

"AERUS" Innovative Tool. *J Artif Intell Mach Learn & Data Sci, 1*(4), 9-18.

Shafaghat, T., Bastani, P., Nasab, M. I., Bahrami, M. A., Montazer, M. A., Zarchi, M. K. R., & Edirippulige, S. (2022). A framework of evidence-based decision-making in health system management: A best-fit framework synthesis. *Archives of Public Health, 80*(1), 1-20.

Välimäki, M. A., Lantta, T., Hipp, K., Varpula, J., Liu, G., Tang, Y., ... & Li, X. (2021). Measured and perceived impacts of evidence-based leadership in nursing: Amixed-methods systematic review protocol. *BMJ Open, 11*(10), e055356.

Wang, G., Xia, Y., Halili, X., Tang, S., & Chen, Q. (2023). Academic-practice partnerships in evidence-based nursing education: Protocol of a theory-guided scoping review. *Nurse Education in Practice, 7*(3), 103644.

Youssef, N., Saleeb, M., Gebreal, A., & Ghazy, R. M. (2023, July). The internal reliability and construct validity of the evidence-based practice questionnaire (EBPQ): Evidence from healthcare professionals in the Eastern Mediterranean Region. *MDPI Healthcare, 11*(15), 2168.

Zhao, J., Bai, W., Zhang, Q., Su, Y., Wang, J., Du, X., ... & Hu, J. (2022). Evidence-based practice implementation in healthcare in China: A living scoping review. *The Lancet Regional Health–Western Pacific, 20*(3), 1-11.