Nurses' Knowledge, And Attitudes towards Evidence-Based Practice Implementation in Minia University Hospitals: A Cross-Sectional Descriptive Study

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Abstract

Background: Evidence-based practice has been considered as a key for healthcare quality measure. As a result of its influence on nurses' knowledge and practice, evidence-based practice has gained prominence in the nursing profession. Therefore, evidence-based practice is increasingly acknowledged as a critical component of improving the quality of healthcare and nursing care services, as well as achieving patient care excellence. **The study aimed** to explore nurses' knowledge and attitudes toward implementing evidence-based practice. **Research design:** A cross-sectional research design was used to answer the study question. **Sample:** A convenient sampling of 100 nurses from staff nurses. **Setting**: The study was applied at Minia University Hospitals. **Tools of data collection:** Two tools were used, 1st tool was personal and professional data the second part was nurses' knowledge related to implementation of evidence-based nursing practice, and 2nd tool: was the evidence-based practice attitude scale. **Results: The study** revealed that (34.5%) of nurses had satisfactory knowledge, while (37.9%) of nurses had a negative attitude toward evidence-based nursing practice implementation. **Conclusion:** There a positive correlation between nurses' knowledge and attitude toward evidence-based nursing practice implementation. This study provides a foundation for the adoption of measures to encourage the use of EBP by nurses in different healthcare settings in Egypt, as well as a baseline assessment for upcoming reviews. **Recommendations:** Carefully crafted evidence-based programs, properly equipped facilities with state-of-the-art informatics tools.

Keywords: Attitudes, Evidence-Based Practice, Knowledge, Nurses

Introduction

One of the most dynamic human disciplines is Health care, and a lot of money is spent annually on high-quality and advanced research, resulting in an exponential growth in healthcare literature. Regularly, new and more effective medicines and procedures are established. One major objective behind all these efforts is to help doctors, nurses, and medical technicians provide patients with the best possible care and treatment **(Alkhatib et al., 2021).** World Health Organization has mentioned that health improvement in societies is based on nursing services supported by evidence-based practice (EBP) **(World Health Organization, 2017)**.

Beginning with Florence Nightingale in the 1800s and developing again within the medical community, EBP continues to advance along with the nursing discipline. EBP is foundational to nursing education and is a way for the nursing discipline to decrease the theory-to-practice gap. It was initiated as an idea to deliver better outcomes for patients who experienced disgraceful and unhealthy conditions and advanced into a foundation that nursing has adopted and maintained to provide safe and competent care **(Johnson & Stellwag, 2022).**

EBP is using current best evidence in making decisions for individual patient care or health service delivery. The current best evidence is the use of up-to-date information from important and valid research regarding the effects of different forms of clinical care, the potential for harm from exposure to the particular agent, the accuracy of diagnostic tests, and the predictive power of prognostic factors **(Naghibi et al., 2021; Melnyk & Fineout-Overholt, 2022; Wright et al., 2023).** EBP facilitates the delivery of effective, efficient, and safe patient care. There is a motivated and systemic effort to integrate EBP into every patient encounter in all clinical settings. Numerous strategies used to promote EBP among healthcare professionals with varying degrees of success in increasing knowledge and shifting attitudes towards EBP. These strategies include journal clubs, mentorship programs, and training in scientific research **(Engle et al., 2021).**

The goals of evidence-based nursing are the following: provide practicing nurses with evidence-based data to deliver effective care defined by the best research; resolve problems in the clinical setting; achieve excellence in delivering patient care, even exceeding quality assurance standards; and introduce innovation. Furthermore, EBP uses a systematic review to emphasize the comprehensive evaluation of all relevant research according to a clinical question **(Louie et al., 2021)**. For nurses, EBP is considered an effective way of enhancing confidence in clinical decision-making (**Dagne & Beshah, 2021).**

Nurses are in crucial positions to promote EBP within clinical settings and have opportunities to advance practice. Therefore, it is essential to understand their perceptions of factors promoting EBP in clinical settings **(Dagne & Beshah, 2021)**. Knowledge, attitude, and perception are the keystones of implementing EBP. Consequently, Knowledge and attitudes can potentially

predict future behavior about EBP implementation **(Ali & Tahir, 2020; Alkhatib et al., 2021).**

Attitudes play an important role in adopting, implementing, and maintaining evidence-based practices in clinical settings. Individuals' positive or negative attitudes and judgments toward the EBP may directly affect their behaviors of either supporting or resisting the implementation of the EBP **(Kagan, 2022).** Positive attitudes towards EBP could be an important step in adopting EBP. According to the Theory of planned behavior, beliefs, attitudes, and social standards will influence individuals' intentions to engage in selected behaviors. Intentions as self-instructions and motivations to engage in innovative behaviors will lead to the adoption and use of EBP **(Vähämöttönen, 2021)**. A growing literature has addressed the importance of attitudes toward EBP in healthcare settings and explored factors at multiple ecological levels that may influence attitudes toward EBP **(Pervin & Hagmayer, 2022).**

Nurses' knowledge of EBP and their positive attitude towards it will contribute to its implementation in the healthcare system. Obtaining knowledge about research methods and having the skill to evaluate research reports critically may enable overcoming the obstacles delaying the application of research findings and thus will lead to improvement of healthcare quality. Hence, the EBP attitude, knowledge, and skills of nurses are very important **(Kaseka & Mbakaya, 2022)**.

Despite the substantial advantages of EBP, the implementation in clinical environments has been challenging **(Duff et al., 2020).** The greatest barriers were lack of time and lack of skills to find and manage research evidence. Other barriers such as Language barriers, inability to access, interpret, and use the research findings, and knowledge deficit about EBP were reported **(Alatawi et al., 2020).** Studies in Arabic countries showed approximate results. In a study that was conducted in Oman; 83% of nurses were moderately successful in searching the Internet, while only 36% of the nurses had adequate searching skills using the databases **(Groom et al., 2021; Abdul Mutalib et al., 2022)**.

Significance of the study

Further developments and evolution of the EBP movement, such as shifting from the traditional hierarchy of evidence to the GRADE approach, stressing patient values and shared decision-making in the process of EBP, and introduction of systematically developed, evidence-based clinical practice guidelines **(Dimitri, 2021).** have been recognized in the standards of physiotherapy education and practice **(Al-Busaidi et al., 2019).** Nonetheless, the barriers and difficulties to the implementation and dissemination of the process of EBP **(Engels et al., 2020).**

In Egypt, increasing attention to providing quality health care to patients has created a burden on the Egyptian government and the Egyptian Ministry of Health (MOH). The pressure to provide quality healthcare services led the Egyptian government to establish the Universal Health Insurance Authority (UHIA) Program for the year 2020 and to develop healthcare in Egypt. Implementation of evidence-based practice has the potential to accomplish the vast majority of the goals set out by the Ministry of Health. Nurses have to provide the most effective care to improve patient outcomes. Knowledge, and attitude of nurses towards the implementation of evidence-based practice help in improving patient outcomes, and providing the most effective care.

Aim of the Study:

The general aim of the study is to explore nurses' knowledge, and attitude toward the implementation of evidence-based practice.

Objectives

- To assess nurses' knowledge related to the implementation of evidence-based practice.
- To measure nurses' attitudes towards the implementation of evidence-based practice.
- To assess the relationship between nurses' knowledge about EBP and their personal and professional data.

Research Questions:

- What is the nurses' knowledge related to the implementation of evidence-based practice?
- What is the nurses' attitudes towards the implementation of evidence-based practice?
- What is the relationship between nurses' knowledge about EBP and their personal and professional data?

Subjects and Methods:

Research design:

A cross-sectional research design was used to answer the research question.

Setting:

The study was conducted in Minia University Hospital (MUH). It provides health and therapeutic services to a broad base of the Upper Egypt community. The hospital includes 10 departments through which the university plays its role and responsibility for the external environment. Minia University Hospitals is a group of hospitals affiliated with Minia University Faculty of Medicine in Minia, Egypt.

Subjects:

A random sample from staff nurses, and nursing supervisors who work at Minia University Hospitals. The sample size was calculated using the following formula

$$n = 2\left[\frac{(Z_{\alpha/2} + Z_{\beta}) * \sigma}{\mu_1 - \mu_2}\right]^2$$ (Kalliokoski, 2021)

Where

n = sample size

$\mathbf{Z_{\alpha/2}}$ = 1.96 (The critical value that divides the central 95% of the Z distribution from the 5% in the tail)

$\mathbf{Z_{\beta}}$ = 0.84 (The critical value that separates the lower 20% of the Z distribution from the upper 80%)

σ = the estimate of the standard deviation = 10.7 ng/mL Hassan et al., 2021).

So, by calculation, the total sample size will be equal to 100 nurses.

The sample groups

- The study group is nurses who are working in different departments at Minia University Hospitals.

Inclusion criteria

All nurses and nurses' supervisors who work in Minia University hospitals.

Exclusion criteria

- Nurses off-duty for vacancies.

- Nurses who aren't willing to participate

Data Collection Tools:

Two tools were utilized in this study as the following

The first tool

The first tool is a questionnaire developed by the researcher, and divided into two sections.

Section 1. It included personal and professional data on the study subjects.

Section 2. It included an assessment of nurses' Knowledge related to the implementation of evidence-based nursing practice. . It consisted of 20 multiple choice questions, and 5 statements True or False which were filled by the nurses assigned in the Minia University different hospitals in the place where each participant worked after assigning them following instructions of ethical considerations.

Scoring system

- <60% unsatisfactory knowledge
- ≥60% satisfactory knowledge

Second tool

Evidence-based Practice Attitude Scale (EBPAS) was developed by **(Aarons, 2004).** Little modifications were conducted by the investigators and supervisors to create a 25-items self-report scale instead of 15 items aimed to measure attitude about using Evidence-based Practice. **Scoring system**

Each statement was rated on a 3-point Likert scale where 1=Disagree, 2= Neutral, and 3= Agree.

Every nurse can receive scores ranging from 25 to 75 grades classified as follows:

- Less than Median = negative attitude.
- More than median = positive attitude.

Validity of the tool:

The study tools were tested for face validity by different experts in nursing administration, and necessary modifications were done after approval of tools from experts.

The EBPAS is a standardized questionnaire that has adequate psychometric properties in different world countries, hence indicating cross-cultural validity.

Reliability of the tool:

The EBPAS overall scale internal reliability measured by Cronbach's alpha is .77 and is considered acceptable **(Szota et al., 2021).**

Pilot study:

Before collecting data for the main research, a pilot study involving 10% of the study's participants, we gauge the study's viability and the amount of time needed for participants to fill out the questionnaires. Conducting the pilot study in the same clinical setting and with participants who fulfilled the study's inclusion and exclusion criteria helped to guarantee that the results would be representative of the main survey. The final survey includes the participants' small ideas and comments. Internal consistency value for overall tools is satisfactory, at 0.76, and .79 respectively for the knowledge and attitude scale. To avoid any potential errors, these details will be left out of the final report of results.

Data collection procedure:

Following Institutional Review Board approval, the research investigator advertised the study for 2 weeks. In Hospital, managers sent requests to staff, and the research team visited individual nursing units on nonconsecutive days to encourage the completion of the questionnaire. In Minia University Hospital, a mix of administrative assistants and managers sent requests to available unit staff, and the research team encouraged participation at tables outside the clinical practice unit during lunch hours on nonconsecutive days. Data were collected over 30 days at all Minia University hospitals' locations. Anonymous survey completion documented consent . A List of acronyms was illustrated to the participants before collecting data.

The institutional review board at Military Medical Academy's ethical committee approved this study. Minia University Hospitals approved data collection. Each participant received a handout that included detailed instructions, a description of their role in the study, information on how and when to complete the questionnaire, and other pertinent information. The researcher explained the purpose of the study to all participants by confirming the confidentiality of their information that was never used for purposes other than scientific research. Participants consented to participate in the study by signing a consent form. Each participant has the right to withdraw from the study at any time. Any different abbreviations were explained to participants to facilitate the data collection process such as (PICOT) which is a type of research question (p) for population, (I) for intervention, (C) for comparison, (O) for outcomes, and (T) for time.

Statistical analysis:

Data for this study were analyzed using SPSS (25) for Windows, and the testing procedures included an assumption test and a hypothesis test. Assuming that all other factors remain the same. Descriptive and inferential analyses were conducted. Measures of distribution and central tendency, percentages, and analyses of variance (ANOVA) were used.

Results

Table (1): Percentage distribution of nurses' personal and professional characteristics (n=100).

Personal and professional characteristics	%
Gender:	
• Male	41
• Female	**59**
Age:	
• < 20 years old	28
• 20-24	**36**
• 25-29	26
• 30-34	10
Mean ± SD	**25.38 ± 2.36**
Years of experience:	
• < 1 year	7

Personal and professional characteristics	%
• 1-4	26
• 5-9	**47**
• 10-14	13
• 15 years and more	7
Job categories:	
• Staff nurse	**66**
• Charge nurse	13
• Supervisor / Head nurse	20
• Director of Nursing	1
Education level:	
• Secondary School diploma	9
• Nursing Institute	**60**
• Bachelor's degree in nursing	26
• Postgraduate diploma	3
• Postgraduate master's degree	2
Marital Status:	
• Single	37
• Married	**58**
• Widowed	5

Table (1) shows that about three-fifths (59%) of the study participants are females, more than one-third (36%) of them are 20-24 years old, nearly one-half (47%) of them have 5-9 years of experience, about two thirds (66%) of them are staff nurses, three fifths (60%) of them are graduated from the nursing institute, and about three fifths (58%) of them are married.

Table (2): Percentage distribution of nurses' knowledge related to implementation of evidence-based practice (n=100).

Knowledge related to the implementation of evidence-based practice	Incorrect	Correct
	%	%
• Definition of EBP	73	27
• Main elements of EBP	29	71
• The elements you consider when formulating the clinical/ research question	70	30
• Benefits of EBP	68	32
• Importance of EBP	80	20
• Importance of EBP for quality	71	29
• Importance of EBP scientific basis	84	16
• The best design to study the prevalence of disease	65	35
• The best design to study the incidence of disease	77	23
• The best design to study the efficacy of an intervention	**100**	0
• EBP process question	67	33
• Primary source of evidence	78	22
• Effect of EBP	87	13
• Components of EBP	26	**74**
• Type of question you need before starting EBP	66	34
• Definition of hypothesis	73	27
• Basics to guide implementation of EBP	75	25
• Essential component of developing EBP guidelines	81	19
• The First step in applying the EBP concept	88	12
• Outcomes of EBP	37	63
• Differences in research questions and EBP questions	42	58
• The PICOT format is used.	54	46
• Importance of collaboration with researchers and theorists for nurses.	55	45
• The P-value definition	42	58
• The sample size calculation	47	53

Table (2) reveals that all of the study participants had "incorrect" answers to the question "The best design to study the efficacy of an intervention", while about three-quarters (74%) of them answered "correct" with the question "components of EBP".

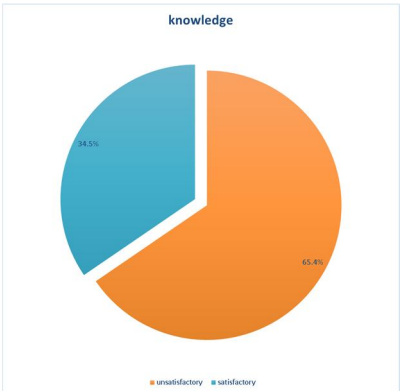

Figure (1): Percentage distribution of nurses' knowledge about evidence-based nursing practice implementation.

Figure (1) illustrates that more than one-third (34.5%) of nurses have satisfactory knowledge levels about evidence-based nursing practice implementation, while (65.4%) of them have unsatisfactory knowledge levels about evidence-based nursing practice implementation.

Table (3): Percentage distribution of nurses' attitudes Toward evidence-based nursing practice implementation (n=100).

Items	Disagree %	Neutral %	Agree %
• Practice should be based on research	23	30	47
• Using research improves the quality of nursing care	23	39	38
• Nurses should base their decisions on the latest research	22	32	46
• I think using research is an important part of developing my practice.	22	37	41
• The use of research is an important part of the development of healthcare professionals	17	32	51
• My workload is too much for me to keep up with all the new evidence	19	46	35
• I am resentful of questioning my clinical practice	24	38	38
• Evidence-based practice is a waste of time	**30**	29	41
• I adhere to tried and true methods, I don't change to something new	22	27	51
• New evidence is so important that I spend time on my work schedule.	19	40	41
• I welcome questions about my practice	13	36	51
• Evidence-based practice is fundamental to professional practice	21	34	45
• My practice changed due to the evidence I found	22	35	43
• Using evidence-based practice is necessary in my daily work	22	40	38
• Literature and research findings are useful in my daily work	19	31	50
• I know better than academic researchers how to care for my clients	21	37	42
• I am willing to use new and different types of EBP/Interventions developed by researchers.	15	39	46
• My professional/clinical experience is more important than using EBP/Interventions	20	31	49
• I would try a new EBP even if it were very different from what I am used to doing	23	30	47
• It was intuitively appealing?	20	36	44
• It "made sense" to me.	20	38	42
• it was required by my supervisor?	18	47	35
• it was required by my agency?	20	37	43
• it was required by your country?	13	33	**54**
• it was being used by colleagues who were happy with it?	15	36	49

Table (3) reveals that nearly one-third (30%) of the study participants disagreed that "evidence-based practice is a waste of time", while more than half (54%) of them agreed that "it was required by your country".

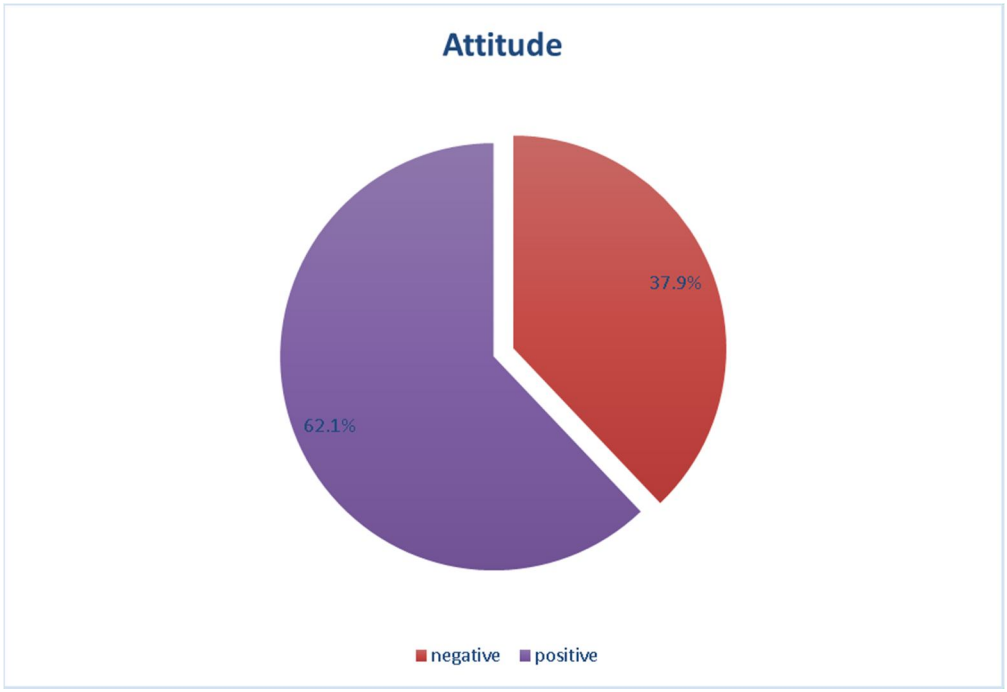

Figure (2): Frequency distribution of nurses' attitudes toward evidence-based nursing practice implementation.

Figure (2) illustrates that more than one-third (37.9%) of nurses have a negative attitude toward evidence-based nursing practice implementation, while (62.1%) of them have a positive attitude toward evidence-based nursing practice implementation.

Table (4): Correlation between nurses' knowledge and attitude towards evidence-based nursing practice implementation.

Pearson Correlation		Total knowledge
Total attitude	r	.175
	P	.082

Table (4) mentions that there is a positive correlation (r=0.175, p=0.082) between nurses' knowledge and attitudes towards evidence-based nursing practice implementation.

Table (5) Relations between nurses' knowledge related to the implementation of evidence-based practice with their personal and professional characteristics.

Personal and professional characteristics	Knowledge		T-test or One-way ANOVA	
	Mean	SD	Test	P
Gender:				
• Male	8.54	2.68	.08	.78
• Female	8.73	3.89		
Age:				
• < 20 years old	9.07	2.81	.48	.70
• 20-24	8.42	3.72		
• 25-29	8.23	3.98		
• 30-34	9.40	2.41		
Years of experience:				
• < 1 year	8.71	2.14	.45	.77
• 1-4	8.65	3.01		
• 5-9	8.28	4.15		
• 10-14	9.38	2.72		
• 15 years and more	9.71	1.25		
Job categories:				
• Staff nurse	8.67	2.99	1.35	.26
• Charge nurse	7.23	2.45		
• Supervisor / Head nurse	9.35	4.94		
• Director of Nursing	12.00	.		
Education level:				
• Secondary School diploma	8.89	2.03	1.52	.20
• Nursing Institute	8.38	2.98		
• Bachelor's degree in nursing	8.50	3.94		
• Postgraduate diploma	12.67	5.69		
• Postgraduate master degree	11.50	9.19		
Marital Status:				
• Single	8.11	3.60	.95	.39
• Married	9.05	3.24		
• Widowed	8.00	4.47		

Table (5) indicates that there are insignificant statistical relations ($p>0.05$) between nurses' knowledge related to the implementation of evidence-based practice with their personal and professional characteristics.

Table (6) Relation between nurses' attitudes towards evidence-based nursing practice implementation with their personal and professional characteristics.

Personal and professional characteristics	Attitude		T-test or One-way ANOVA	
	Mean	Test	F	P
Gender:				
• Male	57.15	12.63	.70 T test	.40
• Female	59.29	12.54		
Age:				
• < 20 years old	59.43	10.61	.27	.84
• 20-24	56.89	14.17		
• 25-29	59.04	12.52		
• 30-34	59.40	12.88		
Years of experience:				
• < 1 year	65.71	1.80	2.38	.06
• 1-4	53.42	15.46		
• 5-9	58.77	11.67		
• 10-14	59.15	12.62		
• 15 years and more	65.86	1.35		
Job categories:				
• Staff nurse	59.85	11.65	1.17	.33
• Charge nurse	53.69	15.71		
• Supervisor / Head nurse	56.40	13.11		
• Director of Nursing	65.00	.		
Education level:				
• Secondary School diploma	60.33	13.43	2.59	.04
• Nursing Institute	60.60	11.28		
• Bachelor's degree in nursing	51.92	13.31		
• Postgraduate diploma	64.67	12.22		
• Postgraduate master degree	59.00	19.80		
Marital Status:				
• Single	58.97	9.43	.07	.93
• Married	58.16	14.20		
• Widowed	57.20	14.96		

Table (6) indicates that there are insignificant statistical relations ($p>0.05$) between nurses' attitudes toward evidence-based nursing practice implementation with their personal and professional characteristics.

Discussion

Evidence-based practice has developed as a novel approach to enhancing the quality of healthcare. There is attention has been paid to the study of evidence-based practices among nurses worldwide in general and in Egypt, in specific (**AbdElbaky et al., 2018).** This study aims to explore nurses' knowledge, and attitude toward the implementation of evidence-based practice in Minia University Hospitals.

In this study, a total of 100 nurses with an approximate closed percentage of males and females and with the majority of the age group from 20 to 24 years old, this mid-range of age is as same as that was previously reported by other studies (**Abd Rabou et al., 2020; Ramadan et al., 2020; Nashwan et al., 2023).** Near to half of these nurses have experience years between 5 and 9 years, it is optimum years of experience for nurses to cooperate in studies and share their opinions and knowledge of evidence-based practice as previously described by **Alkhatib et al. (2021)** who reported that the most important factor affecting nurses' knowledge about EBP is the years of experience when raised more than 5 years.

Regarding the nurses' knowledge related to the implementation of evidence-based practice, nurses in this study showed a low level of knowledge about nursing evidence-based practice, this may be reported because these nurses had not yet undergone instructions or training programs and the practice environments are also affecting nurses' knowledge and there are no any positive environment practices were observed, these results are in agreement with **Hashish et al. (2020)** study, who found from nurses exhibited favorable dispositions towards both evidence-based practice and quality improvement. Nevertheless, they acknowledged their deficiency in EBP understanding and recognized the necessity to enhance their QI skills. The relationship between evidence-based practice and quality improvement was found to have a significant and positive association. The QI was able to predict EBP with a moderate level of accuracy ($r = 0.485$, $R2 = 0.273$, $p < 0.001$).

While is in contrast to Alkhatib et al. (2021) study, which utilized three scales, namely the knowledge scale, perception scale, and attitude scale, to assess nurses' views on evidence-based practice. The findings revealed that a majority of the nurses possessed knowledge about evidence-based practice but held a negative attitude towards it. Additionally, two-thirds of the nurses demonstrated a moderate level of perception regarding evidence-based practice.

All nurses do not know the best design for EBP intervention, this may be because they are not involved in the designing committee for EBP in their hospitals, or because they have no training sessions or post-graduate studies for EBP establishment and design as previously reported by (**Kaseka & Mbakaya, 2022).**

While a great proportion of these nurses know components of EBP, that is maybe because they previously got this information in their major studies, or from regular auditing in hospitals **(Mokhtar et al., 2011)** and it is closely in alignment with **Williamson et al. (2015)** study, who aimed to investigate the knowledge, attitudes, and skills of nurses regarding the evidence-based practice (EBP) process. The findings revealed that a significant percentage of nurses lacked research skills (27.1%), struggled with converting information into a research question (39%), had limited awareness of major information types and sources (28%), faced difficulties in retrieving evidence (27.7%), had challenges in analyzing evidence against a set standard (28%), and encountered difficulties in determining the validity (26%) and reliability (23%) of the evidence.

Most of these nurses do not know the meaning and importance of EBP, this lack of knowledge is in alignment with **Tuğ et al. (2019)** study, which reported that the sub-dimension scores of the Knowledge and Behaviors of Nursing Students Towards Evidence-Based Nursing were analyzed and the sub-dimensions were ranked in descending order based on knowledge were determined as low in knowing the EBP significance, application, and procedures.

They have a lack of knowledge about the guidelines and outcomes of EBP, and it may cause them not interested in applying the EBP because they are ignoring its benefits good outcomes and overall healthcare quality (Melnyk et al., 2018), which agrees with **Kim et al. (2016)** study, who reported significant relationships were observed between barriers and the practice, knowledge, and attitudes associated with evidence-based practice as there are no knowledge about the EBP outcomes which has been determined a great challenge.

Regarding Nurses' attitudes towards evidence-based practice implementation, there was a positive attitude toward EBP among the participant nurses, which is in agreement with Al-**Busaidi et al. (2019)** study, who conducted a cross-sectional study among different nurses in Oman to measure their attitude, knowledge, and practices towards EVP to report that the mean score for attitudes towards EBP was 5.5±1.2, which was the highest among the three categories, also, knowledge had a mean score of 4.9±0.8, followed by practice with a mean score of 4.7±1.2. Attitudes towards EBP were positive, and knowledge and implementation of EBP were low.

A study by **Catu. (2021),** found that the majority of the remaining nurses exhibited a predominantly positive attitude, except when discussing the impact of their workload on their evidence-based practice, the majority of nurses acknowledged the existence of numerous obstacles to evidence-based practice in their workplace.

Also, most nurses reported that EBP is good and saving time, which is in agreement with **Hashish, & Aly, and Alsayed, 2020),** who found that EBP has a great advantage in saving time, as the time saved can be redirected to crucial parts of patient care, such as addressing the patient's emotional and physical requirements.

It was observed that EBP is highly recommended and needed for nurses to use in their research and work, it agrees with **Iradukunda and Mayers (2020)** study, which found that the majority of students, ranging from 84% to 92%, indicated that they possessed a good understanding of the steps involved in evidence-based practice (EBP). Nevertheless, 50% of individuals expressed unfavorable sentiments, whereas a mere 12% engaged in daily quests for evidence.

These nurses are agreeing with that EBP is a crucial nursing practice that is needed in Egypt country, this practice may enhance their work efficacy and then improve the patients' care too with improving nurses' characters and knowledge, according to a study conducted by **Ramadan et al. (2020),** who reported that the largest barriers were assessed to be the particular features of the nurses in the hospitals and some programs are intended to be carried out to improve EBP and then patients' quality of care.

Overall, there was an insignificant statistical correlation ($p=0.082$) between nurses' knowledge and attitude

towards evidence-based nursing practice implementation, that result may be due to the large gap between the nursing profession practices and the research-based other knowledge sources that may be presented to nurses in hospitals, their practice is far from the evidence-based and research-based, and it in contrast to Ammouri et al, (2014) study, who reported from Knowledge/Skills category achieved the highest scores among the staff members with less extensive professional experience. There was a notable disparity in the Attitude component ($p = 0.008$) in favor of nurses with managerial roles, as compared to clinical nurses.

Relation between nurses' knowledge, and attitudes towards evidence-based practice implementation with their personal and professional characteristics, the study findings revealed that there was no significant statistical relation ($P > 0.05$) between nurses' knowledge related to implementation of evidence-based practice with their personal and professional characteristics.

This is in contrast to **Kaseka and Mbakaya's (2022)** study, which found that there was a positive correlation between higher educational attainment and higher scores in knowledge levels ($P = 0.02$). There was a significant correlation between research experience and higher scores in nursing use ($P = 0.005$). Additionally, both research experience ($P = 0.035$) and educational qualification ($P = 0.004$) were related to greater total evidence-based practice. The attitude of nurse-midwives was influenced by their clinical experience ($P = 0.006$) and the specific hospital where they were employed ($P = 0.016$) in contrast to (**Hung et al., 2021)** study, who found a substantial correlation was observed between the age, qualifications, and clinical experience of nurses and their perceived barriers towards evidence-based practice. The most prevalent barriers were found to be associated with organizational factors. A study by (**Pueyo-Garrigues et al., 2021)** found a strong statistical correlation was observed between the degree of knowledge and both education and teaching experience across various nursing programs. The majority of nurses (88.6%) had favorable views towards evidence-based practice, and no statistically significant correlation was found with demographic characteristics.

Limitations

- The small sample size with the convenience technique of population selection is the main limitation of this study.
- The restricted area of study to be only in one of Upper Egypt's healthcare regions is another limitation.
- Other variables would not be reported that may affect nurses' knowledge regarding EBP such as training courses and departments of work.

Conclusion

The results of this study show that nurses' attitudes and expertise are crucial to the success of evidence-based practice (EBP) in healthcare facilities. Due to the clear correlation between nurses' level of knowledge about EBP and their capacity to incorporate evidence-based treatments into clinical practice, nurses' comprehension of EBP is essential to the successful implementation of EBP. The findings highlight the need for evidence-based practice (EBP) education and training programs for nurses since those with a greater understanding of EBP are better able to adopt evidence-based therapies. The way nurses feel about evidence-based practice (EBP) is equally important for how well it is implemented in clinical settings. More openness to using EBP was found among those with positive views, such as believing in its advantages and seeing its importance to patient outcomes.

On the flip side, it was discovered that the broad implementation of EBP was impeded by negative attitudes, which were impacted by perceived obstacles including a lack of time or money. There are substantial associations between nurses' professional and personal traits and their understanding of EBP, according to the research. Results showed that increased knowledge and positive attitudes about EBP were associated with factors including years of experience, educational level, and exposure to EBP training. According to these results, promoting a culture of evidence-based treatment requires focused interventions that aim to increase both knowledge and attitude. Ultimately, if healthcare facilities are serious about improving patient care and clinical outcomes, they must invest in educating and training nurses to use evidence-based practice (EBP).

Implications to practice

This study serves as a preliminary evaluation for future assessments and lays the groundwork for implementing strategies to promote the adoption of evidence-based practice (EBP) among nurses in three different healthcare settings in Egypt.

The findings can be utilized by nurse educators, nurse managers, policymakers at the Ministry of Health, and Egyptian hospital nurses to improve the adoption of evidence-based practice (EBP).

This study provides a foundation for the adoption of measures to encourage the use of EBP by nurses in different healthcare settings in Egypt, as well as a baseline assessment for upcoming reviews.

Recommendations

- Enhance nurses' knowledge of EBP through targeted training. Educational programs should be developed and implemented to ensure that nurses at all levels are equipped with the knowledge necessary for EBP adoption.
- Promoting positive attitudes towards EBP is another important recommendation. Workshops and seminars designed to foster an understanding of the value and importance of EBP should be organized
- Nursing staff should have access to continuing education that focuses on evidence-based practice (EBP). To guarantee that all nurses have the tools they need to successfully use evidence-based practices, these programs should be designed to accommodate a range of experience and education levels.
- Facilitating mentorship and peer support programs is another key strategy. These programs should pair experienced nurses who are knowledgeable in EBP with less experienced staff to offer guidance and support.
- It is the responsibility of nursing schools to include evidence-based practice (EBP) in their undergraduate and graduate programs. In the long run, this will assist ensure that aspiring nurses have a solid grounding in evidence-based procedures from the get-go.
- Those nurses with more experience and knowledge of evidence-based practices (EBP) should serve as mentors to those with less experience and knowledge, helping

them to understand and implement EBP in their work. One way to promote learning by doing is to form communities of practice or peer support groups.

References

1. Alatawi, M., Aljuhani, E., Alsufiany, F., Aleid, K., Rawah, R., Aljanabi, S., & Banakhar, M. (2020). Barriers to implementing evidence-based practice in the nursing profession: A literature review. American Journal of Nursing Science, 9(1), 35-42.
2. Aarons, G. A. (2004). Mental health provider attitudes toward adoption of evidence-based practice: The Evidence-Based Practice Attitude Scale (EBPAS). Mental health services research, 6, 61-74.
3. Abd Rabou, F. M. E., Abd Elmonem, H. H., & Naser, E. G. (2020). Evidence Based Practice Intervention Effectiveness for Nurses on Integrative Developmental Care of Mothers and their Neonates in Rural Health Settings. Egyptian Journal of Health Care, 11(2), 331-357.
4. AbdElbaky, M. M., Mohamed, E. A., & Nagib, R. M. (2018). Impact of Simulated Education program on Nurses' Performance of Invasive Procedure at Intensive Care Units: Evidence Based Practice. International Journal of Nursing Didactics, 8(12), 13-20.
5. Abdull Mutalib, A. A., Md. Akim, A., & Jaafar, M. H. (2022). A systematic review of health sciences students' online learning during the COVID-19 pandemic. BMC Medical Education, 22(1), 524.
6. Al-Busaidi, I. S., Al Suleimani, S. Z., Dupo, J. U., Al Sulaimi, N. K., & Nair, V. G. (2019). Nurses' knowledge, attitudes, and implementation of evidence-based practice in Oman: A multi-institutional, cross-sectional study. Oman medical journal, 34(6), 521
7. Ali, K. S., & Tahir, N. (2020). Knowledge, Attitude, and Practice Towards Evidence-Based Practice among Occupational Therapists of Karachi. Pakistan Journal of Rehabilitation, 9(2), 18-25.
8. Alkhatib, A. H., Ibrahim, E. A., Ameenuddin, M., & Ibrahim, I. A. (2021). Nurses' knowledge, perception, and attitude towards evidence-based practice at King Abdullah Medical City Saudi Arabia. American Journal of Nursing Research, 9(1), 1-7.
9. Catu, L. R. (2021). Nurses' Awareness, Perceived Knowledge, Attitude Towards and Barriers in Evidence-Based Practice (EBP). Journal of Health and Caring Sciences, 3(1), 3-17.
10. Dagne, A. H., & Beshah, M. H. (2021). Implementation of evidence-based practice: the experience of nurses and midwives. Plos one, 16(8), e0256600
11. Dimitri, P. (2021). The evolution of evidence based clinical medicine. Practical Pediatric Urology: An Evidence-Based Approach, 1-15.
12. Duff, J., Cullen, L., Hanrahan, K., & Steelman, V. (2020). Determinants of an evidence-based practice environment: an interpretive description. Implementation science communications, 1(1), 1-9.
13. Engels C, Boutin E, Boussely F, Bourgeon-Ghittori I, Couturier B, Fromantin I, et al. (2020). Use of evidence-based practice among healthcare professionals after the implementation of a new competency-based curriculum. Worldviews Evid Based Nurs.17(6): 427–436. pmid:33210419
14. Engle, R. L., Mohr, D. C., Holmes, S. K., Seibert, M. N., Afable, M., Leyson, J., & Meterko, M. (2021). Evidence-based practice and patient-centered care: Doing both well. Health care management review, 46(3), 174
15. Groom, L. L., McCarthy, M. M., Stimpfel, A. W., & Brody, A. A. (2021). Telemedicine and telehealth in nursing homes: an integrative review. Journal of the American Medical Directors Association, 22(9), 1784-1801.
16. Hashish, A., Aly, E., & Alsayed, S. (2020). Evidence-Based Practice and its Relationship to Quality Improvement: A Cross-Sectional Study among Egyptian Nurses .The Open Nursing Journal, 14(1).
17. Hashish, A., Aly, E., & Alsayed, S. (2020). Evidence-Based Practice and its Relationship to Quality Improvement: A Cross-Sectional Study among Egyptian Nurses .The Open Nursing Journal ،١٤)١.(
18. Hassan, H. H., Abdelrahman, S. M., Fahmy, A. M., & Ahmed, F. A. (2021). Factors Contributing Career Change among Nurses working at selected hospitals. Minia Scientific Nursing Journal, 10(1), 11-18.
19. Hung, C. C., Kao, H. F. S., Liu, H. C., Liang, H. F., Chu, T. P., & Lee, B. O. (2021). Effects of simulation-based learning on nursing students' perceived competence, self-efficacy, and learning satisfaction: A repeat measurement method. Nurse Education Today, 97, 104725.
20. Iradukunda, F., & Mayers, P. M. (2020). Rwandan nursing students' knowledge, attitudes and application of evidence-based practice. Curationis, 43(1), 1-7.
21. Johnson, J. E., & Stellwag, L. G. (2022). Nurses as bridge builders: Advancing nursing through the diffusion of knowledge. Journal of Advanced Nursing, 78(11), e137-e146.
22. Kagan, M. (2022). Social workers' attitudes toward evidence-based practice: The mediating role of work-related self-efficacy. Social Work Research, 46(3), 217-228.
23. Kalliokoski, O. (2021). Experimental design and statistical analysis. In Handbook of laboratory animal science (pp. 69-108). CRC Press.
24. Kaseka, P. U., & Mbakaya, B. C. (2022). Knowledge, attitude and use of evidence based practice (EBP) among registered nurse-midwives practicing in central hospitals in Malawi: a cross-sectional survey. BMC nursing, 21(1), 1-13.
25. Kim, S. O., Oh, H. S., & Wang, M. S. (2016). A study on the nursing students' knowledge, attitudes and behavior towards the elderly. The Journal of Korean Academic Society of Nursing Education, 22(2), 163-170.
26. Louie, E., Barrett, E. L., Baillie, A., Haber, P., & Morley, K. C. (2021). A systematic review of evidence-based practice implementation in drug and alcohol settings: applying the consolidated framework for implementation research framework. Implementation Science, 16(1), 1-29.
27. Melnyk, B. M., & Fineout-Overholt, E. (2022). Evidence-based practice in nursing & healthcare: A guide to best practice. Lippincott Williams & Wilkins
28. Naghibi, D., Mohammadzadeh, S., & Azami-Aghdash, S. (2021). Barriers to evidence-based practice in the health system: a systematic review. Evidence-Based Care, 11(2), 74-82.
29. Nashwan, A. J., Abou Hashish, E. A., Mohamed, A. S., Alrimawi, I., Aqtam, I., Al Obeisat, S., ... & Atout, M. (2023). Exploring the National Nursing Research Priorities in the Eastern Mediterranean Region and Overcoming Associated Challenges.
30. Pervin, M., & Hagmayer, Y. (2022). Attitudes towards evidence-based practice of professionals working with children and adolescents with autism spectrum disorder in Bangladesh. Administration and Policy in Mental Health and Mental Health Services Research, 49(5), 861-880.
31. Pueyo□Garrigues, M., Pardavila□Belio, M. I., Whitehead, D., Esandi, N., Canga□Armayor, A., Elosua, P., & Canga□Armayor, N. (2021). Nurses' knowledge, skills and personal attributes for competent health education practice: An instrument development and psychometric validation study. Journal of advanced nursing, 77(2), 715-728.
32. Ramadan, E. S. F., Elsabahy, H. E. S., & El-shaer, A. M. (2020). Nursing staff awareness about evidence based practice: Facilitations, barriers and beliefs. Egyptian Journal of Health Care, 11(4), 96-120.
33. Szota, K., Thielemann, J. F., Christiansen, H., Rye, M., Aarons, G. A., & Barke, A. (2021). Cross-cultural adaption and psychometric investigation of the German version of the Evidence Based Practice Attitude Scale (EBPAS-36D). Health research policy and systems, 19(1), 90.
34. Tuğ, Ö., Şahin, S. Y., & İyigün, E. (2022). Knowledge, Attitude, and Behaviors of Nursing Students on Evidence-Based Nursing. JOURNAL OF EDUCATION AND RESEARCH IN NURSING, 19(3), 305-311.
35. Vähämöttönen, E. (2021). Utilizing the theory of planned behavior and attribution theory to inform insourcing management. Lappeenranta-Lahti University Of Technology LUT, School of Business and Management, Master's Programme in International Business and Entrepreneurship (MIBE)
36. Williamson, K. M., Almaskari, M., Lester, Z., & Maguire, D. (2015). Utilization of evidence-based practice knowledge, attitude, and skill of clinical nurses in the planning of professional development programming. Journal for nurses in professional development, 31(2), 73-80.
37. World Health Organization. (2017). Global diffusion of eHealth: making universal health coverage achievable: report of the third global survey on eHealth. World Health Organization.
38. Wright, B., Brookman-Frazee, L., Alegría, M., Langer, D., & Lau, A. S. (2023). Shared Decision Making between Community Therapists and Latinx Caregivers During Evidence-Based Practice Delivery in Publicly-Funded Children's Mental Health Services. Patient Education and Counseling, 107867.