

Nurse Managers' Perceived Knowledge and Skills Regarding Evidence-Based Nursing Practice

Doaa F. Ellboudy¹, Nermin M. Eid², and Zeinab M. Rashad³

¹Assistant Lecturer in Nursing Administration, ²Professor of Nursing Administration,

³Lecturer of Nursing Administration, Faculty of Nursing, Menoufia University

Abstract: Evidence-based practice in the health care setting has become a gold standard and a core competency for all health care professionals. The purpose of the study was to investigate the nurse managers' knowledge and skills of evidence based nursing practice. Methods: Descriptive design was used. The study was conducted at Menoufia University hospital and Shebin El-Kom Teaching hospital. A convenient sample was used to select 90 nurse managers. Two instruments were used for data collection. Knowledge' and skills assessment questionnaires were used for data collection. Results revealed that mean score of nurses according to their perceived knowledge of evidence-based nursing practice was 44.80% in Shebin El Kom Teaching hospital vs. 48.49% in Menoufia University hospital. Mean score of their related perceived skills was 46.21% vs. 53.22% in Shebin El Kom Teaching hospital and Menoufia University hospital. Conclusion: Approximately half of the nurses did not perceive that they have enough knowledge and skills about evidence based practice. Recommendation: The study results should be disseminated to the important key persons (nurse managers) to be considered.

Key words: Evidence based nursing practice (EBNP), Nurse Managers

Introduction

Nurses are the largest group of health care providers and have a key role in ensuring the promotion of health care and delivering better services. EBP is important to the professional development, responsibility, and capabilities of nurses, and it has become an important subject in nursing and has integrated into daily practice. In addition, nurses who have based their practices on scientific evidence provide their clients and organization better and more cost-effective nursing care than those who do not base their practice on EBP (Fortney et al., 2014).

Evidence-based practice is often viewed as a response to growing demands in many fields that professional practice should be based on the most up-to date, valid and reliable research. The concept of EBP is typically defined as the use of evidence (i.e. research findings) combined with professional expertise and patient preference (Aveyard and Sharp, 2013).

Furthermore, on a daily basis, nurse practitioners, nurse managers, nurses, physicians, pharmacists, and other healthcare professionals seek answers to numerous clinical questions. An evidence based approach to care allows healthcare providers to access the best evidence to answer these pressing clinical questions in a timely fashion and to translate that evidence into clinical practice to improve patient care and outcomes. Without current best evidence, practice is rapidly outdated, often to the detriment of patients (Melnik and Fineout Overholt, 2015).

Two factors have created the urgency for nursing to be engaged in EBP. The first is the priority place of EBP in current health policy in the advanced countries as a mean of delivery of effective and sufficient health care. Another factor is that other health professions are becoming more accomplished at using evidence in their decision making. If nurses do not get involved in EBP, they

will find themselves increasingly isolated and powerless (Abdel-Aziez, Ali, Metwally and Mohammed, 2016).

Significance of the study:

Systematic evaluation provides understanding to an organization's unique strengths and challenges. Performing an assessment prior to EBP implementation will provide information on the healthcare environment and whether or not adequate knowledge and skills are in place and help an organization create specific strategies to implement EBNP.

Theoretical Framework

Roger's Diffusion of Innovation by Everett Rogers (1995) was adopted as a theoretical framework for this study. An innovation is an idea that is perceived as new by an individual, so while the concept of EBP is not new, it can still be considered an innovation. Roger describes five stages involved in the innovation-decision process. These stages are important to consider when planning implementation strategies for EBP. When making a decision of whether or not to implement an innovation, an individual progress through a process over time that involves these five stages: knowledge, persuasion, decision, implementation, and confirmation (Oluwatoyin, Eke and Bisola, 2015).

Purpose of the study:

This study was conducted to investigate the nurse managers' knowledge and skills of evidence based nursing practice.

Research questions:

- What is nurse managers' knowledge of evidence based nursing practice?
- What are nurse managers' skills of evidence based nursing practice?

Methods

- **Research design:** Descriptive research design was used in conducting this study. **Sample:** Convenient samples of 90 nurse managers were recruited from Menoufia University hospital and Shebin El-kom Teaching hospital. They have at least two years of experience working in the hospital. **Setting:** This study was conducted in Menoufia University Hospital and Shebin El-kom teaching hospital.

- **Data collection instruments:** Two structured questionnaire were used for data collection.

Instrument one: Knowledge' assessment questionnaire. This instrument was developed by Upton and Upton (2006) and modified by the investigator. It was divided into two parts as follows:

- **Part one** displayed the socio-demographic characteristics form of data. It contained information about name of the hospital, age, nursing position, nursing qualification, years of clinical experience, work place. There were two open-ended questions related to attendance of training courses on evidence based practice and previous experiences
- **Part two:** It contained 13 multiple choice questions with 5 multiple choice answers. The respondents were encouraged to answer all the questions and select the correct answer.

Instrument two: Skills assessment questionnaire. This instrument was adapted from Upton and Upton (2006). It contained three parts:

- **Part One:** Involvement of partners in evidence based activities.
- **Part two:** Assessment of the frequency of nurse managers utilization of information resources for making clinical decisions and nursing care.
- **Part three:** Assessment of nurse managers' skills in performing different evidence based practice activities.

Practice

- **Part four:** Assessment of online literature searching skills by nurse managers.
- **Validity:**
A bilingual group of five experts was selected to test the content and face validity of the instruments. The panel included two professors in nursing administration department, two professors in Medical Surgical Nursing departments and one professor from Community Health Nursing department (Faculty of Nursing, Menoufia University). The investigator asked the panel to critiq to review the instruments as a whole, The panel examined the relevance of instruments to the purpose of the study, clarity and simplicity of the words of research questions, comprehensiveness of questions, appropriateness of the length of instruments, ordering of questions, biase, and redundancy in questions. Necessary modifications were done. The instruments were considered valid from the experts' perspectiveness.
- **Reliability:**
Knowledge assessment questionnaire was tested for reliability by the internal consistency coefficiency alpha (a=0.81). Skills assessment questionnaire was also tested by the internal consistency coefficiency alpha (a=0. 96).

Scoring system:

Score	Interpretation
> 75%	High knowledge/skills
> 50%- 75%	Moderate knowledge/skills
≤ 50%	Low knowledge/skills

Methods:

Before any attempt to collect data, an official approval letter was submitted to the Dean of the Nursing College to collect data from the pre-mentioned study settings. Also, written approval letters were submitted to the director of Teaching Hospital and the director of University Hospital to collect data from the pre-mentioned study subjects. The

letter contained the title, aim of the study, and methods of data collection.

Ethical consideration:

The study was conducted with careful attention to ethical standards of research and rights of the participants:-

• **Informed consent:**

The respondents' rights was protected by ensuring voluntary participation; so that informed consent was obtained by explaining the purpose, nature, time of conducting the study, potential benefits of the study and how data will be collected.

• **Anonymity and Confidentiality:**

The respondents were assured that the data will be treated as strictly confidential; furthermore, the respondents' anonymity was maintained as they weren't required to mention their names.

Pilot study

The pilot study was carried on **9** nurse managers They represented **10%** of sample size. The purpose of the pilot study was to ascertain clarity, relevancy, applicability of the study tools and to determine the obstacles that may be encountered during data collection. It also helped to estimate the time needed to fill the questionnaire instruments. Based on the results of the pilot study, no modifications were done to the instruments.

Statistical design:

The collected data was categorized, tabulated, analyzed and presented in descriptive forms by using SPSS version 18. Statistical analysis included the arithmetic mean, standard deviation, chi-square test, ttest and Pearson correlation (r).

Results

Table 1. represents socio- demographic characteristics of the studied subjects in

Practice

the studied settings. As shown in the table, the highest percentage of the studied sample were from the University Hospital and ranged from 35-<45 years old. Also, the highest percentage of the studied subjects had Bachelor degree in nursing and most of them were head nurses. Regarding years of experience, the highest percentage of the studied subjects had more than or equal 15 years of experience and worked in critical care units. Most of the studied subjects haven't attend any training course on EBP and haven't any previous experience in conducting research studies.

Table 2: illustrates total mean's score of the studied subjects' knowledge about EBNP as reported by them.

Table 3. illustrates the total mean score of the studied nurses skills related to the utilization of EBNP as reported by them. As noticed from the table, total mean score of the studied nurses' skills related to the utilization of EBNP as reported by

them was 84.9. Furthermore, the studied nurses' skills in utilization of human information resources for making clinical decisions and nursing care were the highest. On the other hand, the studied nurses' skills for EBNP search had the lowest mean score.

Fig 1 illustrates the percentages of knowledge and skills in the utilization of EBNP as reported by the studied nurses in the studied settings. In Shebin El Kom Teaching hospital, 44.80 % of nurses had knowledge about utilization of EBNP compared to 48.49% of nurses in university hospital..

Table 4: represents correlation between total knowledge score and total skills score as reported by the studied nurses. As noticed from the table, there was a highly statistical significant positive correlations between total knowledge score and total skills score (R= 0.46) P <.0001

Table (1): Socio- Demographic Characteristics of the Studied Subjects in the Studied Settings (N=90).

Socio-demographic characteristics Items		No	%
Hospital name	University Hospital	56	62.22%
	Teaching Hospital	34	37.78%
Age	25-<35 years	10	11.11%
	35-<45 years	63	70.00%
	≥45 years	17	18.89%
Educational Qualification	Bachelor degree in nursing	58	64.44%
	Professional diploma in nursing	19	21.11%
	Master degree in nursing	12	13.33%
	Doctorate degree in nursing	1	1.11%
Job title	Nursing director	2	2.22%
	Vice director	7	7.78%
	Nursing supervisor	18	20.00%
	Head nurse	63	70.00%
Years of Experience	5-<10 years	3	3.33%
	10-<15 years	32	35.56%
	≥15 years	55	61.11%
Department	Inpatient departments	29	32.22%
	Critical care units	40	44.44%
	Nursing administration department	9	10.00%
	Specialized units (Infection control unit, quality assurance unit and continuing education unit).	12	13.33%
Training course on EBP	Attend	22	24.44%
	Not attend	68	75.56%
Previous experience in conducting research studies	Yes	31	34.44%
	No	59	65.56%

*Nurse Managers' Perceived Knowledge and Skills Regarding Evidence-Based
Nursing Practice*

Table (2): Total Mean's Score of the Studied Subjects' Knowledge in Use of EBNP as Reported by Them (N=90).

knowledge in use of EBNP	Maximum score	Mean	SD	Mean's percentage
Total score of knowledge in use of EBNP	13	6.12	2.16	47.08%

Table (3): Total Mean's Score of the Studied Subjects' Skills in Use of EBNP as Reported by them (N=90).

Skills categories in use of EBNP:	Maximum score	Mean	SD	Mean's percentage
Total score of skills in use of EBNP	172	84.9	22.49	50.76%
Skills in performing research activities	18	8.74	2.85	48.56%
Utilization of print information sources for making clinical decisions and nursing care.	15	6.28	2.66	41.87%
Utilization of human information sources for making clinical decisions and nursing care.	18	16.27	3.06	77.48%
Utilization of electronic information sources for making clinical decisions and nursing care.	21	10.14	3.56	48.29%
Skills in performing different EBNP activities	45	23.17	7.24	51.49%
Skills in the search options while searching online databases and web search engines for EBNP.	55	20.3	8.4	36.91%

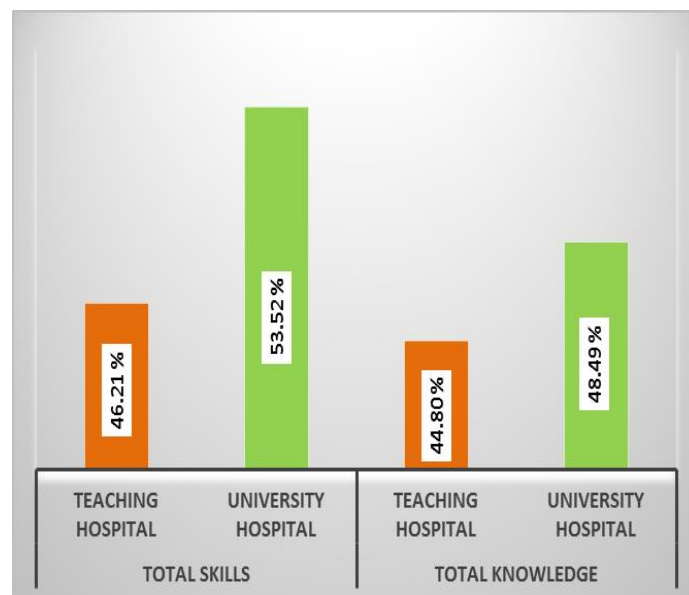


Figure (1) Total Mean's Percentage Score of Knowledge and Skills in Use of EBNP as Reported by the Studied Subjects in the Studied Settings (N=90).

Table (4): Correlation between Total Knowledge Score and Total Skills Score as Reported by the Studied Subjects (N=90).

Variables	R	p-value
Total knowledge score	.46	.0001**
Total skills score		

Discussion

Concerning the answer of the first question (“What is the nurse managers' knowledge of evidence based nursing practice?”). The findings of the present study showed that the nurse managers had low knowledge level (47.13%) about EBP. From the investigators' point of view, this could be attributed to the lack of preparation of nurses in undergraduate studies and lack of inservice training in hospitals about evidence based nursing practice (EBNP).

In this respect, Hussein and Hussein (2014) stated that the culture in health care agencies and school of nursing in Egypt did not encourage utilization of EBP and maintain EBP literacy. This could hinder the curriculum planners from translation of the research activities into a unified EBP framework. In addition, insufficient financial resources as well as journals, reports, and computers to making EBP a reality in their theoretical and clinical teaching could affect negatively on nurses' ability to access to evidences from various sources.

The result of the present study was congruent with Ali (2014) who found that the pretest of the nurses on EBP knowledge indicated low knowledge level (47.13%) compared to moderate knowledge level (70.72%) in the post test after conduction of the EBP teaching program.

In confirmation with these results, Stokke et al., (2014) mentioned that nurses had lack of knowledge about EBP, seldom incorporate research findings into practice, and they tended to use knowledge derived from experience and social interactions.

Besides, Heydari et al., (2014) found that nurses had lack of knowledge pertaining to research based finding due to nurses' lack of access to research

findings, insufficient evidence and insufficient time.

In addition, Eldeeb and Bakeer (2016) concluded that the highest scores percentage of the study subjects had a poor knowledge regarding EBP in the pretest phase. Furthermore, the results of the current study was consistent with a study conducted by Chan et al., (2011), which revealed that nurses had no knowledge about research utilization.

In contrast with findings of the present study, a study conducted by Mazurek et al., (2014) who found that the nurses perceived their EBP knowledge level as moderate.

In addition, the present study result was opposed to an international comparative study conducted by Upton et al., (2015) which indicated that nurses had a high level of knowledge and skills about EBP. From the investigators point of view, this contradiction was attributed to the difference in the settings, the studied nurses, educational background and culture of the organization.

Concerning the answer of the second question (“What are nurse managers' skills of evidence based nursing practice?”). The findings of the present study showed that the nurse managers rated themselves as having moderate level of skills in performing EBP.

On the otherhand, the findings were contrasted with Schneider, Evans and Haas (2015) who found that the overall mean score of research skills subscales was low as nurses rated themselves low in such skills. Also, Chien, Bai and Wong (2013) opposed present study results and found that majority of nurses had lack research skills due to lack of nursing research consultants, limited resources that support research utilization and difficulty to critically appraise skills of research evidence.

In addition, the finding of the present study was contradicted with Eldeeb and Bakeer (2016) who found that the highest score percentage of the studied subjects reported high skills related to EBP' domains in the pre-test and post-test.

Otherwise, Heather et al., (2014) found that most participant rated themselves as proficient or highly proficient in regard to information literacy skills. Furthermore, contrary to the present results, Ali (2014) showed over-rating of the nurses' skills in using information and activities related to EBP.

From the investigators' point of view, this contradiction could be explained that it should be other measuring methods for evaluating nurses' skills which also emphasized by Steurer (2010) who claimed that there is minimal nursing literature on how to best teach and evaluate skills required for EBP.

Frequency of applying EBP activities: According to the current study findings, the frequency of the nurse managers involvement in implementing EBP process were low (48.56%).

In the same line, Weng et al., (2013) found that nurses reported minimal utilization of research and majority of nurses had obstacles to research utilization in their nursing practice.

This was consistent with Ali (2014) who found that the frequency of the nurses' involvement in implementing EBP process was low. This was congruent with Bostrom et al., (2013) who reported that nurses use EBP to a limited extent .

The present study showed that the lowest mean score of the studied subjects was the nurse managers critically appraise against set criteria any literature they have discovered.

This was consistent with Abo Elgheit (2017) who found that majority of nurses showed insufficient research

skills which act as high barrier for research utilization among nurses. Nurses cannot do or partial do the skills of research based finding. They cannot critically appraise an article dealing with new diagnostic intervention or synthesizing research article.

Frequency of using information resources for making clinical decisions and nursing care. The present study findings showed that that the use of human sources for getting nursing care information was at the top (77.48%). Human information sources were followed by electronic information sources (48.29%).It was worth noting that the use of print sources (41.87%) received the lowest score percentage.

This was contrasted with the study conducted by Majid et al., (2011) who found that the use of human sources for getting nursing care information was at the top. Human information sources were closely followed by print sources. In addition, the use of electronic information sources received the lowest score.

From the investigators' perspective, this contradiction may be attributed to the rapid change in technology and availability of smart phones. The use of electronic information sources by nurses is a matter of concern because a considerable amount of the latest research information is now only available in electronic format.

A. Printed information sources:

The study findings showed that low percentage (41.87%) of the studied subjects had the ability of seeking printed sources of information. This was consistent with a study conducted by Ali (2014) who showed that the percentage of total score means and standard deviation of the positive responses revealed low frequency of nurses' abilities in seeking printed sources of information.

In the same line, Barends et al., (2017) mentioned that in management

evidence-based practice (EBP) remains in its infancy; a substantial amount of research suggests that managers don't read academic articles or consult the scientific evidence. As a result, managers are often not aware of the accumulated scientific evidence available on key issues in their practice. This was consistent with Dalheim, Harthug, Nilsen and Nortvedt (2012) showed that nurses mainly used experience based knowledge for use in practice rather than evidence gained from research journals

B. Human information sources:

The findings of the current study revealed that the majority of the studied subjects (77.48%) use the human information sources. This was congruent with Ali (2014) who found that the mean percentage and standard deviation of the human information sources was most frequently used by the majority of the nurses.

In the same line, findings from surveys among Norwegian nurses conducted by Dalheim et al., and Berland et al., (2012) reported that nurse practitioners rarely use research and rely on other sources of information such as their own and their colleagues' practical knowledge, knowledge gained from their nursing education, nursing literature and guidance from experts.

Likewise a study conducted by Mazurek et al., (2014) revealed that the majority of respondents indicated that when they needed information, they consulted colleagues and peers rather than using journals and books.

This finding was consistent with studies of Mills et al., (2009) in Majid et al., (2011) who found that nurses used information gained from trainings and interactions with people more frequently than information gained through reading journal articles or textbooks.

C. Electronic information sources:

The findings of the current study revealed that the percentage of the electronic information sources was low (48.29%) frequently used by the nurse managers. From the investigators' point of view, the low use of electronic information sources by nurses could be due to limited literature searching skills of nurses.

But contrasted to that, Ali (2014) revealed that the mean percentage and standard deviation of the electronic information sources was moderate frequently used by the nurses.

In addition, the present study finding was contradicted with Yoder et al., (2014) who mentioned that nurses use electronic database to find research evidence more easily due to their school library training on using of research engines.

D. Skills in performing different EBNP activities:

The present study showed that the studied nurses rated themselves as moderate level (51.49%). This was inconsistent with Ali (2014) who reported that the nurses possess poor skills in implementing EBP activities.

The present study revealed that the highest mean score of the studied nurse managers was identifying clinical issues/ problems), while the lowest mean score of the studied nurse managers was translating a clinical issue/ problem into a well-formulated clinical question. This was consistent with Prentiss and Butler (2018) who assumed that nurses had low level of skills. For converting information needs into a research question as well as they cannot critically appraise research studies against set criteria.

Self-rating of nurse managers' skills in the search options while searching online databases and web search engines for EBNP. The findings showed that the studied nurse managers skills low (36.91%). This was congruent with a study conducted by Ali (2014)

who indicated that nurses were unfamiliar with Boolean operators when searching the internet, although use of different Boolean and proximity operators can change the search results. In the same line, Majid et al., (2011) mentioned that the overwhelming majority of the nurses did not know how the use of Boolean and proximity operators could change their search outcomes. The reported use of different search operators was also quite low. Nurses' limited familiarity with Boolean operators was also evident from the very small percentage of nurses who chose an appropriate search statement for a given hypothetical topic related to Boolean operators.

Furthermore, this result was consistent with Yadav and Fealy (2012) and Shazly, Abdel- Azeem, and Ahmed (2018) which concluded that nurses had lack of search skills and were not familiar with using of different Boolean operators the present study findings showed that there was a highly statistical significant positive correlations between total knowledge level and total skills. This was consistent with a study conducted by Hussein and Hussein (2014) who found that there was a highly significant positive correlations between the nurses' reported knowledge and skills in EBP.

Recommendations

Based on the findings of this study and the review of the literature, the following recommendations are proposed:

At practical level:

- ❖ The results of the study must be disseminated the study results to the important key persons (nurse managers) to be considered.

At administration level:

- ❖ Establishment of research disseminating center in the hospital

to collect and disseminate the best research findings.

- ❖ Evidence based practice committee must be formulated to provide services for education, revising, analyzing and testing the applicability of research findings and disseminating these findings to the nursing administrative staff and nursing education department which consequently disseminate this knowledge to the rest of nurses through workshops or training programs.
- ❖ Initiate a link (partnership) between health institutions and academic institutions for adoption of research findings.
- ❖ The faculty of nursing which hold collaborative protocols with hospitals to commit the hospital to send their nursing research needs and the faculty to responsible authorities

At educational level:

- ❖ EBP need to be integrated in nursing curricula and incorporated as a component of the research process in graduate education to increase nurses' knowledge about research and EBNP.
- ❖ Improve nurses' willingness toward EBP through increasing their awareness regarding the benefits of using research findings in practice. Also through arranging regular workshops and clinical field trips to the organizations or hospitals that actually applied the information system and EBP.
- ❖ In-service training of the nurses on skills of evidence-based practice to reduce barriers to using research evidence and to increase use of research evidence in clinical practice.
- ❖ Nurses must be encouraged to attend nursing conferences, scientific meetings, and involve them in the developmental activities.

- ❖ Training provision to build basic online searching skills for nurses about health care information.
- ❖ Creation of a learning environment and designing and delivering training programs such as EBP journal clubs.

At research level:

- ❖ Replication of the study on large sample size and different settings.

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Nurse Managers' Perceived Knowledge and Skills Regarding Evidence-Based Nursing Practice

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