

Facilitators and Barriers for Research Utilization among Bachelor Nurses

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Abstract

Research utilization refers to the use of some aspect of a study in an application unrelated to the original research. **Aim:** was to investigate the facilitators and barriers for research utilization among bachelor nurses. **Methods:** A descriptive study design was conducted at Ain Shams University hospitals. **The subjects:** All bachelor nurses (105). **Tool:** A self-administered questionnaire including a scale for the facilitators and barriers to use research in practice was used in data collection. **Results:** Enhancing managerial support was the greatest facilitator for research utilization. The setting-related barriers were the top greatest barriers for research utilization. **Conclusion:** Research utilization has not been widely implemented yet in Ain Shams University Hospitals. Enhancing managerial support was the greatest facilitator for research utilization. The setting-related barriers were the top greatest barriers for research utilization. **Recommendations:** Small libraries containing recent research articles should be established in each unit, and electronic databases should be available for all the nurses at least in each unit or department.

Key words: Barriers, Evidence-based practice, Facilitators, Research utilization.

Introduction

Scientific research that either refines the current knowledge or results in new information is regarded as the main component of nursing practice. However, the process of incorporating good-quality research findings into nursing practice is not straightforward. This drawback resulted in initiation of terms of research utilization and evidence-based nursing into the world of professional nursing care during research development (Holloway, 2017).

Research utilization continuously express concern about whether nurses use the best available research evidence to guide their clinical practice (Heydari,

2014).

Evidence-based practice (EBP) and research utilization (RU), are interrelated concepts that pertain to the identification, utilization and application of knowledge from research sources to clinical practice. EBP has been defined as “the integration of clinical expertise, patient values, and the best research evidence into the decision making process for patient care” (Andrews *et al.*, 2015). RU is a sub-set of EBP, which refers to “that process by which specific research-based knowledge is implemented in practice” (Peters *et al.*, 2015).

The International Council of Nurses (ICN) at the occasion of the 100th

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International Nurses' Day released a statement with the title "Closing the Gap: From Evidence to Action." The Lancet in response immediately published an editorial pointing out its lateness and implying that contemporary nursing is not evidence based (Thorsteinsson, 2013). This is alarming. Therefore, a number of investigations have been conducted to identify the barriers for RU among nurses (Brian, 2014).

The results of several studies indicated that application of research findings improves clinical outcomes (Walker, 2014).

Nurses as the main members of the professional health team should be able to provide best quality care to patients according to the evidences that originated from studies and patient preferences. Nurses' research utilization (RU) is strongly emphasized in today's nursing education and clinical practice, the primary aim of research utilization is to provide high quality nursing care to patients (Shelley et al., 2015).

Researchers and Experts in the area utilization across disciplines began addressing the problem; examine reasons for the lack of utilization and to propose strategies to improve it (Squires et al., 2011).

A number of factors associated with nurses' low extent of research utilization two years post-graduation were found, most of them potentially modifiable. These findings illustrate the multitude of factors related to low research utilization extent and take their interrelation ships into account (Wallin et al., 2012).

Nurses in healthcare organizations should use research findings to assess their skills, develop and implement policies and procedures, and perform effective clinical interventions to provide

care plan to improve positive outcomes for patients (Brown, 2013).

In the study of Squires et al, (2011), the main barriers included: Time constraints, lack of knowledge, limitation of access to research literature, lack of clinical authority, inadequate skills in critical evaluation of research papers, and lack of professional support. Interestingly, having sufficient time for review and application of research findings, access to relevant research reports, and peer support were listed as the main facilitators (Shifaza et al., 2014).

Aim of the study

This study aims at Investigating the facilitators and barriers for research utilization among bachelor nurses.

Research Question

What are the facilitators and barriers to utilize research among bachelor nurses?

Subjects and Methods

Design and Setting:

A descriptive cross - sectional design.

Sample Type

All population was included at the study. The study was conducted at the Ain Shams university hospitals.

Subjects

All bachelor nurses (105) working at Ain Shams university hospitals.

Tools of Data Collection

Facilitators and barriers to use research in practice questionnaire was

used to collect the data, The questionnaire consisted of three parts:

Part 1:- Demographic characteristics: such as gender, age, educational background, current position, work area in the hospital, years of experience and number of attended training courses.

Part 2:- "Nurses` information seeking characteristics" This part measured the information characteristics of the study nurses.

Part 3:- "Barriers and facilitators for using research findings in the practice". This part consisted of two dimensions:

First dimension measured the facilitators of research utilization (RU); it was consisted of 14 facilitators to research utilization.

Second dimension measured the barriers of RU; this part developed by **Funk (1991)**. It consists of items that will examine the nurses` perceptions of the four factors (*potential barriers*) of research utilization.

2. Methods of data collection

The researcher collected the data through meeting eligible nurses in their workplace, explaining the aim of the study, informing them about their rights, and inviting them to participate. The researcher was present all time in order to respond to any queries. The filled forms were then collected and reviewed to check completeness of the basic information.

Ethical Approval

Prior study conduction, ethical approval was obtained from the scientific

research and ethics committee of the Faculty of Nursing, Ain Shams University. Oral informed consents were obtained from the participants. They were informed about their right to refuse or withdraw from the study with no consequences. They were reassured about the anonymity and confidentiality of the information collected, and that it would be used for the purpose of scientific research.

Statistical analysis

Data entry and statistical analysis were done using SPSS 21.0 statistical software package. Data were presented using descriptive statistics in the form of Frequencies and percentages for qualitative variables, and mean and standard deviations medians, and 95% confidence interval for the quantitative variables.

Cronbach alpha coefficient was calculated to assess the reliability of the developed tools through their internal consistency. Deferential analysis was done for quantitative variables using independent t-test in cases of two independent variables with parametric data. While correlation for numerical parametric data, the level of significance was taken at (P-Value < 0.05)

Sperman`s rank correlation coefficient test was used to analyzed the relation between facilitators and barriers scores. The best linear regression model was used to examine the significance of the facilitators' scores.

Result

Table (1) reveals that the range of the study nurses age was between 22 to 52 years old. The majority of the study nurses (86.2%) had bachelor degree. The most of them (43.8%) were staff nurses.

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The most of them (92.6%) were female, and the most of the study nurses (26.6%) were working in infection control unit.

Table (2) displays that (80.9%) of the study nurses agreed that the total facilitators of the study facilitate the implementation of research utilization and only (19.1%) of them disagreed.

Table (3) demonstrates that (83.0%) of the study nurses agreed that organization barriers affect RU, (73.4%) of them agreed that total barriers affect RU. Regarding their views about the most important barriers (14.9%) reported lack of resources was the most important barrier.

Table (4) Shows that there was statistically significant correlation between nurses' agreement upon total facilitators and communication barriers ($P= 0.001$), total barriers ($P=0.006$), and

organization barriers ($P=0.01$). On the other hand that there was no statistically significant correlation between nurses' agreement upon total facilitators and adopter barriers ($P= 0.15$), and research barriers ($P=0.6$).

Table (5) presents a positive correlation between facilitators and barriers scores of research utilization among study nurses ($p < 0.05$). There no statistical correlation between organization facilitators and adopter barriers, and also between organization facilitators and research barriers.

Table (6) shows a positive correlation between facilitators and barriers scores of research utilization among study nurses. Also there is a positive correlation between facilitators' scores and availability of printed materials (books/journals, etc.).

Table (1): Socio-demographic characteristics of nurses in the study sample (N=94).

Items	Frequency	Percent
Age		
< 30	26	27.7
30+	68	72.3
Range		
Mean \pm SD	22.0-52.0	
Median	34.4 \pm 7.4	
	34.00	
Gender:		
Male	7	7.4
Female	87	92.6
Educational background:		
Bachelor	81	86.2
Post graduate educations	13	13.8
Job position:		
Director	5	5.3
Nursing supervisor	9	9.6
Head nurse	34	41.5
Staff nurse	41	43.6
Work area in the hospital:		
Medical surgical	17	18.1
Emergency	2	2.1
ICU	14	14.9
Theater	15	16.0
Administration	6	6.4
Education / training	4	4.3
Infection control	25	26.6
Quality	11	11.7
Experience years:		
< 10	41	43.6
10+	53	56.4
Range		
Mean \pm SD	1.0-30.0	
Median	11.3 \pm 7.1	
	10.50	
Attended training courses in :		
Patient care	58	61.7
Nursing administration	75	79.8

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Table (2): Total perception upon Research Utilization (RU) facilitators among nurses in the study sample (N= 94).

Items	Frequency	Percent
High agreement upon facilitator (60%+):		
Communication	71	75.5
Organization	72	76.6
Total agreement upon facilitators:		
High	76	80.9
Low	18	19.1

Table (3): Total perception upon Research Utilization (RU) barriers among nurses in the study sample (N= 94).

Items	Frequency	Percent
High agreement upon barriers (60%+):		
Adopter	51	54.3
Organization	78	83.0
Innovation (research)	47	50.0
Communication	60	66.0
Total agreement upon barriers:		
High	69	73.4
Low	25	26.6
Most important barriers:		
Lack of resources	14	14.9
No time for reading	11	11.7
No time for adopt new ideas	13	13.8

Table (4): Relations between nurses` perception upon total facilitators and various barriers and their socio-demographic characteristics

Items	Total facilitators				X ² test	p- value
	High		Low			
	No.	%	No.	%		
Adopter :					2.12	0.15
High	44	86.3	7	13.7		
Low	32	74.4	11	25.6		
Organization :					Fisher	0.01*
High	67	85.9	11	14.1		
Low	9	56.3	7	43.8		
Innovation (research):					0.27	0.60
High	39	83.0	8	17.0		
Low	37	78.7	10	21.3		
Communication :					10.55	0.001*
High	56	90.3	6	9.7		
Low	20	62.5	12	37.5		
Total barriers :					Fisher	0.006*
High	61	88.4	8	11.6		
Low	15	60.0	10	40.0		

Table (5): Correlation matrix of facilitators and barriers scores.

Items	Spearman`s rank correlation coefficient					
	Facilitators		Barriers			
	communication	Organization	adopter	Organization	research	communication
Facilitators:						
Communication						
Organization	.482**					
Barriers :						
Adopter	.312**	0.156				
Organization	.229*	.280**	.362**			
Research	.327**	0.202	.454**	.662**		
Communication	.292**	.398**	.326**	.607**	.552**	

(**) Statistically significant at $p < 0.01$

Table (6): Correlation between research utilization (RU) facilitators and barriers scores among study nurses and their characteristics

Items	Spearman`s rank correlation coefficient	
	Facilitators scores	Barriers score
Barrier score	0.371**	
Age	0.041	0.119
Qualification	0.138	-0.011
Experience years	0.018	0.131
Frequency of searching literature	0.173	-0.063
Availability of :		
Printed materials	0.255*	0.163
Internet sources	0.09	0.003
Other (experts, etc)	0.175	-0.126

(*) Statistically significant at $p < 0.05$

(**) statistically significant at $p < 0.01$

Discussion

One of the main goals of conducting healthcare research, particularly in university hospitals, is to improve the delivery of services by implementing the findings and evidences into practice (Buhaid and Lau, 2014). The nursing daily practice involves making decisions that must be based on the best available evidence provided by research. Therefore, the nurse must be able to search with scrutiny, critically appraise and understand, and use research to support daily practice (Cannon and Bowsel, 2017).

The present study was aimed at investigating the facilitators and barriers for research utilization among bachelor nurses. The study results indicate that the nurses in the study settings have low utilization of evidence-based information in their practice, and lack information-seeking conducts and behaviors. They have high perception of the various facilitators and barriers of implementation of RU.

Only slightly more than one-tenth of the nurses in the current study sample were carrying a postgraduate degree in nursing. This seems to have influenced their opinions about the utilization of research in practice. Thus, their higher

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education level had a negative impact on their score of perception of RU facilitators. This might be explained by their actual experience with research since the master or doctorate degrees require the conduction of research as a thesis. In this respect, *Kermanshahi and Parvinian (2012)* claimed that nurses' higher academic levels could influence their view of the factors affecting implementation of RU. On the same line, *Singleton (2017)* in a study in the United States reported significant gains in RU beliefs among doctorate degree nurses throughout their five-year degree program.

The present study findings point to poor information-seeking behaviors among the nurses in the study sample. This was evident both regarding the sources of information as well as the frequency of utilization of these sources. This might have two different explanations. The first is the lack of availability and/or accessibility of the sources of information as mentioned by a majority of them. The second is the lack of time forcing them to seek information from the most near and available sources, which are often the physicians as well as peers and experts. The findings are in congruence with, *Ali (2013)*, in a study in New El-Kaser Eliny hospital, reported that the nurses mentioned peers, seniors, and physicians as their most helpful sources of knowledge.

The internet was also a commonly used source of information among the nurses in the present study, while the use of journals and textbooks were minimal. This is quite expected in the era of internet and smartphones, which allow access at any time and from any place. In agreement with this, the internet was the most commonly used source of information among Iranian nurses and the ease and accessibility of the sources of information was a main reason

underlying their information-seeking behaviors (*Sarbaz et al., 2016*).

The results of the present study have also demonstrated that the research activities were very mediocre among the nurses. Thus, only a few of them worked in data collection, which could be a part of the research projects of those having postgraduate degrees. On the other hand, the great majority of them had never performed the activity of application of research findings, which is the essence of RU. This is certainly attributed to the barriers and challenges facing them in the use of research results in their clinical practice. A similar low engagement in research activities was reported among nurses in Canada, and this was attributed to the lack of research supervision in their workplace settings (*Robichaud-Ekstrand, 2016*). Thus, *Mitchell et al. (2015)* in a study in England proposed a strategic approach to encourage nurses and midwives to be more involved in research activities.

A main objective of the present study was to solicit nurses' opinions about the facilitators of research utilization in their practice. The results demonstrated high perception of all communication facilitators. The availability/ accessibility of research reports had the highest perception, with less perception of the availability of articles in Arabic language. However, in disagreement with this, *Hyunwook (2014)* highlighted that reading articles published in English language and interpreting their findings were major barriers to research utilization in non-English-speaking countries, such as Finland, Sweden, Greece, Turkey and Norway. The discrepancy with our findings could be due to that the nursing education at the university level in Egypt is in English language.

The aforementioned present study findings point to the urgent need for a

center that collects and disseminates the research findings, which are often scattered leading to much difficulties for the nurses to reach them. In this respect, *Mahnaz et al. (2015)* stressed on giving more emphasis on teaching research skills and critiques for nurses, with regular meetings with researchers to discuss recent research findings that could improve the quality of nursing care.

Concerning the organization-related facilitators, the present study results showed that the nurses gave most emphasis to two main issues. The first is the availability of time for implementing research findings, and the second is the awareness of nurses regarding RU. Therefore, in order to foster research utilization, the hospital administration should revise the work schedules of the nurses and dedicate a portion of their time to research. It should also conduct staff development activities aimed at increasing nurses' awareness of the importance and benefits of RU. In line with this, *Shifaza et al. (2014)* highlighted that administrators should encourage an RU environment by supporting nurses' research activities.

Although the nurses in the present study gave high importance to time availability for research and its utilization as an organization facilitator, they gave much less importance to having more employees and/or sufficient staff. This indicates that the problem is not with lack of time due high workload or shortage of staff, but is rather a problem of time management. Thus, the need is for rescheduling nurses' working time in order to allocate enough time for research and its application. Thus, good mapping of nurses' activities is strongly recommended (*van den Oetelaar et al., 2018*).

In total, the majority of the nurses in the present study had high perception of

all facilitators. This reflects high awareness of the factors that could positively influence their research utilization behaviors. Similar high perceptions of the facilitators of implementation of research utilization were reported among nurses in previous studies (*Ali, 2013; Heydari, 2014; Hadgu et al., 2015; Mahnaz et al., 2015*).

When the nurses' in the current study were asked to rank the facilitators of research utilization according to their importance, they again considered time availability as the most important facilitator. Surprisingly, the incentives was the least important facilitator from their point of view. This reflects their true willingness to improve their research utilization behaviors regardless any monetary recompenses or rewards. On the contrary, the nurses in Colombia gave more importance to incentives as a facilitator of their engagement in and utilization of research (*DeBruyn et al., 2014*).

Another main objective of the present study was seeking nurses' opinions about the barriers hindering the utilization of research in their practice. The study findings revealed that their highest perception was of the barriers related to the organization. Moreover, in this category of barriers, almost all of them perceived the barrier of inadequacy of the facilities for implementation of RU. This is of major importance since without such an aiding and encouraging environment, both the physical and the psychological environment. The finding is in congruence with the results of a study in Spain where the nurses mentioned that the organizational factors were the main barriers hindering their utilization of research in their practice (*Cidoncha-Moreno and Ruíz de Alegría-Fernandez de Retana, 2017*).

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The foregoing present study finding is also in agreement with previous studies that demonstrated organization-related barriers as the most important in the hindrance of research utilization (*Salemi et al., 2010; Belal et al., 2012; Hyunwook; 2014*). On the same line, *Wang (2013)* and *Fen et al. (2015)* highlighted that the organization-related barriers were the major barriers to implement research in nursing clinical practice.

Moreover, *Magda (2016)* emphasized that inadequate managerial support as managerial limitations to professional independence, nursing manpower shortage, low nurses' income, inadequate nursing facilities, and decrease of nursing research fund are important barriers related to setting. Further, *Albanus (2015)* mentioned the lack nurses' authority to change practice due to existing managerial system and influenced by the Egyptian traditional and the nursing organizational cultures as a major barrier to research utilization. In fact, the nursing managerial system in Egypt is a hierarchical top-down one in which managers and physicians are considered as the authority to be obeyed with no discussion.

The category of barriers that came second in importance according to the nurses' opinions in the present study was that of communication. The results revealed high perceptions of all its elements particularly the availability of articles and the lack of research communication between supervisors and subordinates. Thus, *O'Connor et al. (2018)* in a study in East Africa recommended more training in research for nurses, along with more time to be given for discussion of research findings. The benefits of such training have been shown in a previous study in the United States (*Spiva et al., 2017*).

On the other hand, the nurses in the present study had lower perception of the communication barrier concerning the lack of research relevance to the nurse's practice. The finding indicates that most of them are aware of the importance of research findings in their clinical practice and in the care for their patients. In line with this, a study among Spanish nurses reported that their main motivator to conduct and utilize research was its relevance to their patient care (*Llauradó-Serra et al., 2016*).

The adopter category of barriers to research utilization was the third in the ranking of importance according to the current study nurses' opinions. Its elements pertain to the characteristics of the nurse who should adopt and utilize the research findings. The highest percentage of perception in this category was upon nurses' lack of computer skills. On the other hand, the lowest perception was upon the nurses' lack of awareness of research. The finding implies that while these nurses might have good awareness of research principles their statistical knowledge and skills are lacking, and this needs to be addressed in their curricula. In agreement with these present study findings, the lack of computer skills was reported as a main barrier to research utilization among nurses in Jordan (*Elzayyat, 2014*) and in the United Arab Emirates (*Bani-Issa et al., 2016*).

Lastly, the least perception upon the barriers of research utilization among the nurses in the present study was in the category of innovation or the characteristics of the research itself. The main barriers in this category were those related to the long time taken in the publication process, which could delay the utilization of research findings, and the overwhelming amount of research information so that the nurse cannot keep-up with. On the other hand, a few of the nurses mentioned the methodological inadequacies and conflicting results in the

literature as barriers to research utilization. A similar research-related barriers was reported among nurses in Nepal (*Kc et al., 2016*).

Overall, approximately three-fourth of the nurses in the current study expressed their high perception of the total barriers to research utilization. The bivariate analysis revealed significantly higher nurses' perception of the adopter barriers among those in older in age, females, working in nursing administration, and having attended training in patient care. However, the multivariate analysis failed to identify any significant independent predictors of the score of perception of the barriers. This indicates that the nurses' view of the barriers is the same regardless age, gender, qualification, experience, or training.

As regards nurses' ranking of the three most important barriers to research utilization, the nurses in the present study viewed the lack of resources as the most important one, while the lack of time for reading was the least one. The finding does not coincide with their views of the facilitators, where the time availability was ranked first. This might be attributed to that even if they had time, the lack of facilities such as good library, computers, and access to internet service would not help and are still barriers. Similar findings were reported among nurses in Saudi Arabia, but time preceded resources (*Hamaideh, 2016*), which could be attributed to differences in the settings.

The present study findings also point to statistically significant associations and correlations among the categories of each of the facilitators and barriers, as well as between the facilitators and barriers. This is quite expected since many of the facilitators are the reverse of the barriers. Nonetheless,

the barriers may tend to look at the negative aspects, whereas the facilitators tend to look at more positive aspects. Thus, both are considered of great importance in enhancing research utilization.

Conclusion

Based on the study findings, it can be concluded that research utilization has not been widely implemented yet in Ain Shams University Hospitals due to various barriers. The setting-related barriers were most influential, with the lack of authority, lack of resources, other staff was not supportive for implementation, and physicians not cooperate in implementation and the lack of time for reading, no time to adopt new ideas being the top greatest barriers in implementing research evidence at the clinical practice. Also, communications of the research evidence were the second influential barriers of research utilization, with research reports not readily available, implication of practice were not made clear and the research is not reported clearly. Enhancing managerial support, , increasing the time for reviewing and implementing, encouraging nurses' engagement in research studies performed at work setting, , and availability of research reports were the greatest facilitators for implementing research evidence at the clinical practice. Demographic data of the study nurses were not influencing factors to research utilization. The internet source was the most important source for searching for information, research or evidence supporting nursing practice. A comprehensive strategy should be formulated to improve research utilization. Enhancing managerial support might be the most promising facilitator, given Egyptian traditional culture and current health care system. The current study elicited the facilitators and barriers

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of research utilization among bachelor nurses.

Recommendation

Small libraries containing recent research articles should be established in each unit, and electronic databases should be available for all the nurses at least in each unit or department.

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