

# A SURVEY OF NURSES' PERCEIVED BARRIERS TO RESEARCH UTILIZATION IN BAHRAIN IN COMPARISON TO OTHER COUNTRIES

Nawal Buhaid  
Rosalind Lau  
Margaret O'Connor

## Correspondence:

Dr. Rosalind Lau  
Research Fellow  
School of Nursing & Midwifery  
Monash University, Clayton Campus  
Wellington Rd  
Clayton, Victoria 3800  
Australia  
Phone: +61-3 9902 0552  
Fax: +61-3 9905 4837  
Email: [rosalind.lau@monash.edu](mailto:rosalind.lau@monash.edu)

## Introduction

Over the past two decades, nurse leaders have attempted to address the issue surrounding the utilization of research in practice. They have emphasized the use of scientific evidence-based research to improve patients' quality of care.(1) Swan et al(2) argued that nurses need to implement the best available evidence to optimize patient care and meet the challenges facing health services. Despite increasing efforts by nurse leaders to promote the utilization of research in nursing practice, it is still a challenge and the uptake is slow. It has been postulated that this persistent gap is due to a range of barriers that hinder the nurses in implementing evidence-based clinical practice. To bridge the gap between what is known and what transpires in practice, a common approach is to identify barriers for changing practice.

Barriers to research utilization have been extensively explored in Western countries including the United States (USA),(3, 4) United Kingdom (UK),(5-7) and Scandinavia.(8, 9) The relevance and applicability of these findings to nursing practice in Bahrain must be considered cautiously, because the health care system and professional culture from Bahrain is different from these countries.

Only recently studies have explored research utilization among the nurses in the Middle East where the culture and delivery of health care, including nursing, are significantly different from Western countries. A Turkish study found the lack of time to implement new ideas was the most frequently perceived barrier. Another two Turkish studies found the main barrier was inadequacy of facilities to implement research.(10, 11) An Iranian study found barriers to research utilization were time

## Abstract

**Background:** Nurses play a vital role in using the best available research evidence to provide optimal care for patients. Despite the importance of nurses' uptake of research utilization, little is known about the uptake of research utilization among nurses in Bahrain.

**Objectives:** This study investigated the perceived barriers to research utilization in Bahrain and compared the barriers to those of other countries.

**Methods:** This is a cross-sectional exploratory study carried out among the registered nurses in a major teaching and research hospital in Bahrain. The Barriers to Research Utilization Scale (Barriers Scale) was used to collect the data.

**Results:** The results showed that the top three ranked perceived barriers were lack of authority to change practice, inadequate facilities and time constraints. Of the top 10 ranked perceived barriers, six items were related to the subscale 'organization' (the setting) and four to the subscale 'presentation' (report and accessibility of research findings).

**Conclusions:** If research utilization is to be enhanced in Bahrain, the local organizational barriers need to be addressed. An important step is to create an organizational environment that recognizes the value of research and encourages and supports nurses' research activities.

**Key words:** Bahrain, barriers, Barriers Scale, evidence-based practice, research utilization

constraints, inadequate facilities and lack of autonomy of nurses to change nursing practice.(12) Another Iranian study found that in general, nurses held positive attitudes toward research; however, the majority of nurses were not convinced of the importance of research to nursing practice and to the nursing profession.(13)

To our knowledge, no study has investigated Bahraini nurses' perceptions of barriers to research utilization and this study was conducted to fill that gap. The aims of this study were to identify perceived barriers to research utilization in Bahrain and to compare the barriers to those of other countries.

## Methods

This is a cross-sectional exploratory research design. A convenience sample of registered nurses was recruited from a large tertiary government hospital in Bahrain which functions as the center of teaching and research for health professionals. This hospital has 54 wards and 946 beds. At the time of the survey, the total number of nurses in Bahrain was estimated to be 3,037, of which 256 were males and 2,781 were females.(14)

The inclusion criteria for the study were: registered nurses, more than one year of nursing experience, and aged 20 years or over. Exclusion criteria were: student nurses and practical-trained workers with no nursing degree.

## Procedure

Data were collected during December 2008. Six weeks before the commencement of the survey, a set of questionnaires, an explanatory statement and the approval letter from the Ministry of Health, Kingdom of Bahrain were sent electronically to the Chief of Nursing Services of the hospital to seek permission to conduct the study. After permission was granted, two weeks before the commencement of the study, a flyer

and the invitation to participate in the study was sent to the nursing administration to be distributed to the wards. In addition all head nurses and ward supervisors in nursing administration were informed of the study.

The researcher delivered the questionnaires to the ward supervisors or acting senior nurses who then distributed them to the nurses. The participants were asked to return the completed questionnaire in a sealed envelope to their ward supervisors, or to the boxes placed in the nursing administration area. All responses were anonymous. One week after the distribution of the questionnaire an electronic mail was sent to the wards to remind those nurses who had not completed the questionnaire, followed by a second reminder one week later. In addition, the researcher regularly visited the clinical areas to answer questions and was in constant contact by phone with supervisors to track the number of returned questionnaires.

## Instrument

The data was collected using the Barriers to Research Utilization Scale (Barriers Scale) which is the most widely used standard of measurement for the nurses. The Barriers Scale was originally developed in the USA in the 1980s and modified by Funk et al.(3) The theoretical foundation for the development of the Barriers Scale was Rogers' diffusion of Innovations theory.(15) Diffusion theory is the process by which an innovation is communicated through particular channels over time among the members of a social system. The Barriers Scale consists of four subscales: (1) 'nurse' refers to the individual nurse's research values, skills and awareness; (2) 'organization' refers to the barriers and limitations imposed by the setting; (3) 'research' refers to the characteristics and quality of study evidence; and (4) the 'presentation' refers to the report and accessibility of research findings.

The Barriers Scale asks participants to rate on a five-point Likert scale the extent to which they consider each of the 29 items as a barrier to research utilization. The response options range from 1 to 5 with 1: to no extent, 2: to a little extent, 3: to a moderate extent, 4: to a great extent, 5: no opinion. The factor analysis found the item: 'the amount of research information is overwhelming' failed to load on any factor, but was retained based on the feedback from clinicians and administrators.(3) A high mean score signifies a greater barrier. Most studies that used the Barriers Scale presented their findings in rank order, based on the percentage of participants agreeing with each item being a moderate or great barrier to research utilization.

The reported internal consistency reliability of the instrument was modest.(3) The Cronbach's alpha of each subscale was: nurse = 0.80; organization = 0.80; research = 0.72; and presentation = 0.65. To determine the internal consistency of the instrument on this sample, Cronbach's alpha coefficient was performed. The Cronbach's alpha for this study ranged from 0.63 to 0.78, which was lower than that reported by Funk et al.(3)

## Ethical considerations

Approval to conduct the study was sought and granted by an Australian University Human Ethics Committee where the third author was studying, as well as the research technical support team from the Ministry of Health, Kingdom of Bahrain.

## Data analysis

The analyses were performed using the SPSS Version 17 (SPSS Inc., Chicago, IL, USA). The results were presented using descriptive statistics (counts, percentages, means and standard deviations). The response options "to a great extent" and "to a moderate extent" were merged into one category.

## Results

### Participant characteristics

A total of 250 questionnaires were distributed and 219 were returned, giving a response rate of 87.6%. Two hundred and one (93.5%) female nurses and 14 (6.5%) male nurses participated in the study. The majority of the participants were staff nurses (88.5%), followed by ward supervisors (9.1%). The majority of nurses (87.6%) were in the age group 20-45 years. The average age for the participants was 35 years. Eighty three (38.4%) of nurses held a Diploma degree and sixty six (30.6%) held a Bachelor degree. Sixty six nurses (30.6%) had 11-15 years of nursing experience and the average was 12 years. Details of the demographic characteristics are presented in Table 1.

Characteristic	N	%
<b>Gender:</b>		
Female	201	93.5
Male	14	6.5
<b>Age (year):</b>		
20-25	12	5.6
26-35	118	54.6
36-45	59	27.3
46-55	25	11.6
>55	2	0.9
<b>Highest education:</b>		
Diploma	83	38.4
Associate degree	59	27.3
Bachelor degree	66	30.6
Master degree	8	3.7
<b>Professional role:</b>		
Ward supervisor	19	9.1
Staff nurse	187	88.5
Nurse educator	3	1.4
<b>Nursing experience (year):</b>		
1-5	43	19.9
6-10	55	25.5
11-15	66	30.6
16-20	24	11.1
21-25	20	9.3
26-30	7	3.2
>30	1	0.5

**Table 1: Demographic profile of the participants**

### Perceived barriers to research utilization

When "moderate" and "great extent" of the barriers were combined and analyzed, the top three perceived individual items were related to the subscale organization, 'the nurse does not feel she/he has enough authority to change patient care procedures' (72%); followed by 'the facilities are inadequate for implementation' (69.9%); and

'there is insufficient time on the job to implement new ideas' (62.4%). Of the lowest three ranked items, two were related to the subscale research and one to the subscale nurse. The three lowest ranked items were 'the conclusions drawn from the research are not justified' (38%); 'there is not a documented need to change practice' (40.4%) and 'the nurse is uncertain whether to believe the results of the research' (42.0%).

Of the top 10 items perceived as a barrier, six were related to the subscale organization and four to the subscale presentation. Of the least 10 items perceived as a barrier, four were related to the subscale nurse, three to the subscale research, two to the subscale presentation and one individual item which was not included in any of the subscales: 'the amount of research information is overwhelming'. The ranked order of the perceived barriers to research utilization is presented in Table 2 (next page).

In terms of the subscale, the highest barrier was organization and the least barrier was research. The mean values and the standard deviation for each of the subscales were as follows: organization (2.78, SD 0.64), presentation (2.73, SD 0.58), nurse (2.58, SD 0.61), and research (2.53, SD 0.49).

### Comparison between Bahrain and other countries

To date, there have been a significant number of studies conducted on research utilization among nurses worldwide using the Barriers Scale. In the selection of the studies for comparison, we decided on those who used the Barriers Scale in the last five years; these are presented in Table 3 (page 7). Regardless of the country, the greatest barrier was related to the subscale organization, however there were differences on the individual items within the subscale.

Of the ten studies; three studies, one from USA,(16) one from Hong Kong,(17) and one from Turkey(11) reported 'the lack of authority to change patient care procedures' as the greatest barrier to research utilization. This individual item was reported in the top three of all the studies, except for a more recent study conducted in Turkey where it was ranked nine.(18) Three studies; one from Hong Kong(19) and two from Turkey(10, 18) reported 'inadequate facilities for implementation' as their greatest barrier. Three studies; one from USA,(20) one from Turkey(21) and one from Iran(12) reported time constraints as the greatest barrier. One Swedish study reported feeling isolated from experienced colleagues to discuss research as the greatest barrier.(22)

### Discussion

In this study, the highest subscale barrier was 'organization'. This was a surprising finding given that the study was conducted in a hospital which functions as the center of teaching and research for health professionals.



Item	N	(%)
1. The nurse does not feel she/he has enough authority to change patient care procedures	157	(72.0)
2. The facilities are inadequate for implementation	153	(69.9)
3. There is insufficient time on the job to implement new ideas	136	(62.4)
4. The nurse does not have time to read research	131	(59.8)
5. Implications for practice are not made clear	130	(59.4)
6. Research reports / articles are not published fast enough	128	(59.0)
7. The nurse feels results are not generalizable (relevant) to own setting	128	(58.7)
8. Physicians will not cooperate with implementation	125	(57.6)
9. Research reports / articles are not readily available	125	(57.3)
10. Statistical analyses are nit understandable	122	(56.0)
11. Other staff are not supportive of implementation	120	(55.0)
12. The relevant literature is not completed in one place	115	(53.0)
13. The nurse is unwilling to change / try new ideas	114	(52.5)
14. The nurse sees little benefit for self	114	(52.5)
15. Administration will not allow implementation	113	(52.1)
16. The nurse feels the benefits of changing practice will be minimal	110	(50.5)
17. The literature reports conflicting results	109	(50.2)
18. The research has not been replicated	109	(50.0)
19. The nurse is isolated from knowledgeable colleagues with whom to discuss the research	107	(49.3)
20. The amount of research information is overwhelming	101	(46.3)
21. The nurse is unaware of the research	100	(46.3)
22. The research is not reported clearly and readably	100	(46.1)
23. The nurse does not feel capable of evaluating the quality of the research	99	(46.0)
24. The nurse does not see the value of research for practice	97	(44.7)
25. The research has methodological inadequacies	96	(44.0)
26. The research is not relevant to the nurses' practice	95	(43.6)
27. The nurse is uncertain whether to believe the results of the research	92	(42.0)
28. There is not a documented need to change practice	88	(40.4)
29. The conclusions drawn from the research are not justified	82	(38.0)

**Table 2: Rank order of barriers to research utilization**

Author	Sample	Greatest barrier	Second greatest barrier	Third greatest barrier
<b>This study</b>	Bahrain N = 219 Mixed setting Clinical nurses = 187 Supervisors = 19 Nurse educators = 3	The nurse does not feel she/he has enough authority to change patient care procedures	The facilities are inadequate for implementation'	There is insufficient time on the job to implement new ideas
<b>Aktinson et al. 2008</b>	USA N = 249 Community Clinical nurses = 213 The role of 36 participants not reported	The nurse does not feel she or he has enough authority to change patient care procedures	There is insufficient time on the job to implement new ideas	Nurse does not has time to read research
<b>Boström et al. 2008</b>	Sweden Community aged care Clinical nurses = 140	The nurse is isolated from knowledgeable colleagues with whom to discuss the research	The facilities are inadequate for implementation	The relevant literature is not compiled in one place
<b>Chau et al. 2008</b>	Hong Kong Mixed setting Clinical nurses = 1,156 Nursing officers = 166 Ward/Department Operational managers = 36 Nurse specialists = 29 Advanced practice nurses = 40 Others = 31	The facilities are inadequate for implementation	Lack of authority to change practice	Lack of time to implement new ideas
<b>Mehrdad et al. 2008b</b>	Iran Mixed setting Clinical nurses = 316 Head nurses = 59 Nurse educators = 35	The nurse does not have time to read research	Facilities are inadequate for implementation	Nurses do not feel they have enough authority to change patient care procedures
<b>Kocaman et al. 2009</b>	Turkey Mixed setting Clinical nurses = 329	There is insufficient time on the job to implement new ideas	Research reports/ article are written in English	The facilities are inadequate for implementation
<b>Yava et al. 2009</b>	Turkey Medical/surgical wards Clinical nurses = 549 Nurse managers = 74 Nurse educators = 8	The nurse does not feel she / he has enough authority to change patient care procedures	The nurse does not have time to read research	The facilities are inadequate for implementation
<b>Brown et al. 2010</b>	USA Mixed setting Clinical nurses = 226 Nurse managers = 107 CNS/Nurse educator s = 48 NPs/Midwives = 105	The nurse does not have time to read research	There is insufficient time on the job to implement new ideas	The nurse does not have authority to change patient care
<b>Chien 2010</b>	Hong Kong Mixed setting Clinical nurses = 550	The nurse does not feel she has enough authority to change patient care procedures	There is insufficient time on the job to implement new ideas	The nurse does not feel capable of evaluating the quality of research
<b>Uysal et al. 2010</b>	Turkey Medical/surgical wards Clinical nurses = 216	The facilities are inadequate for implementation	The relevant literature is not compiled in one place	Physicians will not cooperate with implementation
<b>Sari et al. 2012</b>	Turkey Mixed setting Clinical nurses = 622 Head nurses/ supervisors/ directors = 96	The facilities are inadequate for implementation	The relevant literature is not compiled in one place	The nurse is unaware of the research

One would expect the institution to support the nurses in using research evidence in their practice. Nevertheless the finding supports the integrative review on the Barriers Scale undertaken by Carlson et al,(23) who commented that studies using Barriers Scale have a high degree of consistency, suggesting that barriers to research utilization by nurses have not changed.

The ranking of each item in this study has shown considerable consistency with those reported in other studies. In this study the highest ranked item was the 'lack of authority to change practice'. Interestingly, this item was also found to be the highest ranked barrier in several countries which have different health care systems to Bahrain. The second highest ranked barrier was related to inadequate facilities. Compared to the other studies, this was consistent with the Swedish study(22) as well as an Iranian study.(12) The third highest barrier was the lack of time to implement new ideas, a similar finding to the study conducted in Hong Kong.(19)

These findings suggest that organizational support is imperative to research utilization. Nurses need to feel empowered to change practices in their clinical setting and not be constrained by the bureaucratic demands of a hierarchical organization. According to Mulhall,(24) it is misleading to dichotomize those carrying out research and those acting in organizational roles as unrelated; rather they should be seen in the context of a whole system. There is a need to procure resources to support and sustain the nurses to increase the nurses' research activity.

The study conducted among Iranian nurses(12) reported the lack of time to read research as their greatest barrier and the lack of authority to change practices as their third greatest barrier. This may be explained by a greater number of senior nurses participating in the

study. In this study, 9.1% were ward supervisors and 1.4% were nurse educators compared to 14.4% head nurses and 8.5% nurse educators in the Iranian study. Nurses in higher positions within a hospital hierarchy are likely to have more authority than those at lower levels and would have higher degrees of autonomy and empowerment to change practices.(25)

It is not surprising that time constraints were ranked within the top three, with lack of time to implement new ideas ranked third, consistent with other studies.(26, 27) Lack of time as a major barrier to research utilization, reflects a serious long-standing problem that exists world- wide.(25)

There were several limitations in this study. This study was carried out in a large teaching and research hospital; thus the findings may not be generalized to all Bahraini nurses in other settings. There may be reporting bias associated with the self-report method which raises questions about the extent to which the responses accurately represent all nurses' perceptions of the barriers to research utilization. The internal consistency of the instrument is relatively low.

## Conclusions

This study identified the perceived barriers to research utilization among Bahraini nurses in a major teaching hospital. The findings showed considerable consistency with those reported by the nurses from other countries. In this study, the organization was a significant barrier to research utilization. The greatest individual item reported was the lack of authority to change practice. Although this study found no differences in the barriers to research utilization compared to other countries, this is the first study of its kind conducted in Bahrain. If research utilization is to be enhanced in Bahrain, the local organizational barriers need to be addressed. An important step is to create an organizational environment

that recognizes the value of research and encourages and supports nurses' research activities.

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