

BARRIERS AND FACILITATORS IN UTILIZING RESEARCH FINDINGS IN NURSING PRACTICE: A MIXED METHODS STUDY FROM LAHORE, PAKISTAN

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ABSTRACT

Background: Research utilization in clinical areas strengthens nursing profession as well as benefits the patients. The objectives of this study were to explore the barriers and facilitators faced in utilization of research findings in their practice among nurses from Lahore, Pakistan.

Material and Methods: A convergent parallel mixed methods study was conducted at Lahore School of Nursing, The University of Lahore, Pakistan from June to November 2021. In quantitative phase, 76 nurses were recruited through convenient sampling technique. In qualitative phase, twelve nurses were interviewed through purposive sampling technique. The data of both parts was analyzed separately and then mixed in the interpretation phase.

Results: Quantitative results showed that top research barriers included “insufficient time (98.6%), non-supportiveness of colleagues (98.6%), and unwillingness to try new ideas (98.6%). In addition, the major facilitators included “conducting clinically based research (100%), hiring of skilled nurses (98.6%), and managerial support (94.7%). The qualitative findings identified the major barriers that are time mismanagement, nurse to patient ratio, and limited support for research utilization. Hiring of clinical instructors, conduction of seminars, organizational support, development of research culture and development of audit department are major

facilitators which nurses identified during the interview. Quantitative results converged with the qualitative results. There was infrequent divergence between quantitative and qualitative findings.

Conclusion: Findings from this study highlights the major barriers and facilitators to research utilization experienced by Pakistani nurses. Insufficient time, non-supportiveness of colleagues, and limited support are the top barriers to utilize research in practice. There is need of skilled nurses, managerial support, and conduction of educational activities to foster the culture of evidence-based practice among Pakistani nurses.

KEY WORDS: Research; Nurses; Nursing; Nursing Practice; Healthcare; Educational Activities; Evidence-Based Practice; Workshops; Pakistan.

INTRODUCTION

Background: Nurses are the basic healthcare professionals in providing health care facilities based on research findings for positive patient outcomes.¹ Nurses should start and make use of the best research findings in their practice to improve patient outcomes and control clinical cost-effectiveness.² Research utilization strengthens nursing as a profession as well as benefits the patients. On the other hand, incorporation of research outcomes into clinical practice remains a key challenge.³

Research utilization in clinical decision making practice is the application of valid, best, and relevant and currently available research findings in clinical and health care decision making practice.⁴ Research utilization involves problem solving concerning to the health of patients, health expenditures and better patient outcomes.⁵

Nurses need appropriate research knowledge to improve the quality of health care services of individual patients. Evidence based practice assures improved patients outcomes and ensures the health professionals to convey innovative patient care.⁶

Research utilization is central for nurses to get aware with the reachable proof and utilize research results in clinical care.⁷ Complete assessment of the experience of research utilization can help for the development of suitable approaches to lessen or get rid of barriers.

Evidence recommends that it occasionally takes more than a decade to apply research results in clinical practice, and that it is often difficult to endure.⁸

Overall, in clinical nursing practice, the use of research results in practice has been found to be little. Therefore, many studies have examined barriers that can hinder research use in clinical practice.¹ Insufficient time to read research, no access to funds, inadequate support of colleagues, no power to change care practices, lack of organizational support, deficiency of research expertise, no association between team, and lack of inspirations are the some perceived barriers that impede them to use research findings in their routine practice.² Though administrators and ward culture environment have long been popular as being among the chief obstacles to evidence-based practice.⁹

Administrative Support is required for mounting nurses' research skills through presence at conferences, ongoing education,

and in-service workshops.¹⁰ The facilitating factors normally recommended by the nurses were various models of learning to upturn their awareness of research methods and to advance skills in assessing research outcomes.¹¹ Therefore, the provision of resources for education and application of research outcomes in clinical practice, in addition to distinct positions in clinical practice for nurses with scientific educations, were also recommended.¹²

Research Problem

Nursing practice demands the application of research findings but still gap remains between what nurses know about research findings and what is essentially done in practice.⁸ Therefore, this research study explored the barriers and facilitators of utilizing research findings in clinical practice within the nursing culture of Lahore, Pakistan.

Research Questions

1. What are the barriers and facilitators in utilizing research findings in nursing practice?
2. How much the barriers and facilitators in utilizing research findings reported by nurses quantitatively converge or diverge by data gathered in interviews?

Research Objectives

Quantitative part

1. To identify the barriers and facilitators in utilizing research findings in nursing practice.

Qualitative part

1. To explore barriers faced by nurses in utilizing research findings in nursing practice.
2. To explore the factors which facilitate utilization of research findings among nurses in their practice

MATERIAL AND METHODS

Design, setting & duration and Technical approval: This convergent parallel mixed methods design study was conducted at Lahore School of Nursing, Faculty of Allied Health & Sciences, The University of Lahore, Lahore, Pakistan from June 2021 to Feb. 2022. Research & Ethical Committee approval was granted vide Notification No. IRB-UOL-FAHS/860/2021 from The University of Lahore. Written informed consent was taken from study subjects.

Population & sampling: At the time of data collection; the population of nurses was 780. With 5.39% margin of error, 90%CL and anticipated 90% positive responses of the participants, the sample size was calculated to be 76 for the quantitative part. For qualitative part, sample included 12 nurses. The sampling technique was convenience. All registered/ staff nurses were eligible. Student nurses and those not consenting were excluded.

Data collection instrument (Questionnaire)

Quantitative part: Data was collected through a questionnaire, developed by Funk, et al. in 1992. Barrier to research utilization scale included 29 items with Cronbach's alpha 0.81 and facilitator to research utilization scale included eight items with Cronbach's alpha 0.84. Each items had five options; 'No opinion', 'To no extent', 'To a little extent', 'To a moderate extent' and 'To a great extent'. The participants were requested to tick one of these five. The response in any of first three options was treated as 'No' and to the last two as 'Yes'.

Qualitative part: Semi-structured interview guide was adapted from different qualitative studies.

Data collection plan

Quantitative part: The principal author herself distributed 76 questionnaires manually. With 1st reminder after one week and 2nd reminder after two weeks, we got response from all the 76 (100%) nurses.

Qualitative part: Face to face in-depth interviews were conducted by the principal author that lasted for 30-50 minutes and were recorded with an audio recording device.

Trustworthiness

Trustworthiness was ensured using the following strategies: credibility, transferability, dependability, and conformability.¹³

Data analysis procedure

Quantitative analysis: Quantitative data was analyzed using SPSS (Version 25). Data was arranged in ascending and descending order. Descriptive analysis was run on sample of 76 participants. Frequencies and percentages were calculated.

Qualitative analysis: Thematic analysis was done on recorded data of transcripts. Afterwards, interviews were first transcribed verbatim in Urdu and then converted into English and retranslated back to Urdu to check for consistency. A total of 235 codes were made. Codes were reduced to twelve categories through scissors and cut technique. The data formed two themes underpinned by nineteen categories.

Integration: Integration of quantitative and qualitative results was done to enhance authentication.¹³ Both were given equal weights, and similarities and differences were interpreted through three possible outcomes i.e. convergence, expansion, and divergence in a joint integration Table 4.¹³

RESULTS

Quantitative Results

Demographic Characteristics of Respondents: The sample of 76 nurses included seven (9.21%) males & 69 (90.79%) females, and 61 (80.26%) in age group 25-35 years & 15 (19.74%) in age group 36-45 years, and 34 (44.74%) having BSN degree & 42 (55.26%) Post RN degree, and 61 (80.26%) having 3-5 years' experience & 15 (19.74%) 6-10 years' experience.

Barriers of Research Utilization (BRU):

Only "Yes" responses are shown. The barriers were sorted from the highest to lowest counts and percentages achieved. "Insufficient time on the job to implement new ideas," "no support from staff for implementation," "unwillingness of nurses

to attempt new ideas," and "late release of research papers and publications" were the top four barriers that all participants (98.6%) rated as moderate to greater extent barriers. Furthermore, all other barriers are explained in Table 1.

Table 1: Nurses' perception of the barriers to research utilization

Rank order	Sub-scale	Items (rated as greater to moderate barrier)	Count	%age
1	O	Insufficient time on the job	75	98.6
2	O	Staff are not supportive	75	98.6
3	N	Unwilling of nurses to change	75	98.6
4	R	Research reports not published fast	75	98.6
5	N	No value of research for practice	74	97.3
6	N	No documented need to change practice	74	97.3
7	P	No relevant literature	74	97.3
8	O	No enough authority to change patient care procedures	74	97.3
9	N	The nurse is unaware of the research	74	97.3
10	P	Research articles not readily available	72	94.7
11	O	Inadequate facilities for implementation	72	94.7
12	P	Statistical analyses not understandable	71	93.0
13	N	Minimal benefits of change	69	90.7
14	O	No time to read research	66	86.8
15	N	Little benefit for self	64	84.2
16	R	Results of research not justified	64	84.2
17	N	Non-capability to evaluate the research	63	82.8
18	P	Research not reported clearly	63	82.8
19	N	Implications not made clear	62	81.5
20	R	Uncertainty about research results	54	71.0
21	P	Overwhelming research information	54	71.0
22	N	No support from administration	51	68.0
23	R	Methodological inadequacies	50	65.7
24	R	No replication of research	48	63.1
25	P	No research relevant to practice	44	58.6
26	N	No knowledgeable colleagues	43	56.6
27	O	No-cooperation of Physicians	43	56.5
28	O	Results not generalizable to own setting	31	40.7
29	R	The literature reports conflicting results	07	09.2

O=Organization, N=Nursing; P=Presentation; R=Research; %; Rating item as great or moderate barrier

Facilitators to Research Utilization

The facilitators of research use were rated according to the participants' great to moderate extent scores, as indicated in Table 2. The highest ranked facilitator that falls

into greater to moderate extent is that the clinical focused researches and relevant should be conducted (100%). While 98% of the participants had marked that hiring of researcher nurses who had command in EBP can act as a role model in improving EBP. It

is the second most marked facilitator. “Enhancing the managerial support, improving understandability of research

report and colleagues support are also the facilitators that fall in greater to moderate category.

Table 2: Facilitators of research use ranking (moderate to great extent)

Rank order	Items (moderate to great extent)	Count	%age
1	Increased therapeutically relevant and targeted research	76	100
2	Employing nurses as role models	75	98.6
3	Increasing managerial support	72	94.7
4	Enhancing the readability of research papers	71	93.4
5	Improving research report availability and accessibility	66	86.8
6	Providing colleague support network	65	85.5
7	Advanced education	65	85.5
8	Increasing the time available	30	39.4

Qualitative results

Demographic Characteristics of Respondents: The sample of 12 registered nurses included two (17%) males & 10 (83%) females, and 10 (83%) in age group 25-35 years & two (17%) in age group 36-45 years, and four (33%) having BSN degree, six (50%) Post RN degree & two (17%) MSN degree, and eight (67%) having 3-5 years' experience & four (33%) having 6-10 years' experience. Majority of the

participants (83%) reported that there is no research culture in their organization. All participants that they never participated in any journal club and fifty percent participants were engaged in research projects.

Themes: The inductively constructed theme framework from the interview of the participants comprised of two themes mentioned in Table 3.

Table 3: Themes of semi structure interviews

Theme	Categories
Barriers of Research Utilization	Time mismanagement
	Nurse to Patient Ratio
	Limited support for research utilization
Facilitators to Research Utilization	Hiring of Clinical Instructors
	Conduction of Seminars
	Organizational Support

Barriers to research Utilization

The analysis of interview data identified the following key barriers to research utilization.

1. Mismanagement of time: Data analysis specified that mismanagement of time was a major barrier to research utilization that nurses face in their clinical practice. A

participant described as follows; **There is a very great workload. I cannot read anything during working hours due to heavy work during shift. After working hours, I cannot read even at home because I also have to look after my family. It is impossible to go to the library and read an article and it is impossible to search journals due to lack of time.** ” (P01)

2. Increased nurse to patient ratio: Nurses' interview indicated that they have a lot burden of patients; therefore they did not utilize research in practice. There is severe shortage of staff in public hospitals. The condition was characterized by one of the participants as follows:

“We cannot use single research in healthcare practice. It is difficult to read research as a single nurse has to look after fifty patients in a shift. In medical and surgical units, two registered nurses have to provide care to 100 beds' patients. We even cannot think about its implementation in such a busy routine.” (P10)

3. Limited support for research utilization: The use of research was influenced by compassionate structural assets such as automated papers, a work-

based head nurses. One of the interviewees reported: “I know research utilization needs special supports like training, mentoring... I don't expect this kind of support for the nurses in clinical setting. It is impossible. I had a lot of else activities that had to be done. There is no system of evidence-based practice in our hospital. It may be our future home take assignment” (P09)

Facilitators to Research Utilization

Facilitators to research utilization are basically the facilities from organization, colleagues, from patient, their attendants and above all from our own view point so that the research base interventions can be applied effectively and properly.

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1. Hiring of Clinical Instructors: Hiring of clinical instructors is a major facilitators to research utilization. As one person put it, “There are no clinical instructors deputed in our hospital to teach the clinical nurses. As nurses on clinical site have poor knowledge about research utilization in nursing

practice. Nurses even do not know about research.” (P02)

2. Conduction of Seminars: Organization should support workshops and seminars on research usage to help participants gain a better grasp of the value of research in clinical practice. As one attendee put it as;

“Seminars should be conducted on weekly basis. It will provide knowledge on modifying nurse’s practices and behaviors according to research.” (P08)

3. Organizational Support: Organizational support plays a key role in implementation of research into practice. Health care organizations exercise momentous impact on the quality of care through a group of factors. A participant has stated

“Yes, there are many areas that need more support like we measure CVP line manually, if we use transducer we can save time and can utilize time in providing care to patient. The cooperation of staff and support of authority is necessary to implement EBP and without it EBP can’t be implemented.” (P06)

Mixing quantitative and qualitative results

The identification of quantitative findings that corresponded to qualitative themes aided in the creation of a unified display of the overall Mixed Method domains. Quantitative findings’ major barrier and

facilitators were converged with the qualitative results. This is illustrated in Table 4.

Table 4: Joint display of qualitative, quantitative, and mixed methods interpretations

Main domain	Quantitative findings	Qualitative Findings	Data convergence label	Mix interpretation methods
Barriers to research utilization	98.6% reported insufficient time a major barrier	Time mismanagement	Convergence	Description of time mismanagement as a major barrier is converged with quantitative findings
	86.8% nurses cannot implement research into practice due to increase workload	Nurse to Patient Ratio	Convergence	Increased patient ratio echoes in interviews
	95% participants marked lack of facilities a major barrier	Limited support for research utilization	Convergence	Limited support for research utilization in interview was confirmed by participants in survey
Facilitators to research Utilization	98% participants need skilled nurses for improvement	Hiring of Clinical Instructors	Convergence	Need of skilled personals is confirmed in quantitative results
	85% nurses suggested need of advance education to increase research knowledge	Conduction of Seminars	Convergence	Participants reported the need of educational activities confirmed by survey data
	95% participants marked encouragement and managerial support a key to implement research utilization	Organizational Support	Convergence	Organizational support is also a major facilitator marked by participants in survey as well as in interview

DISCUSSION

This study extends research on research utilization by exploring nurses' perceptions of barriers to and facilitators of utilizing research into clinical practice; such perceptions have recently been considered, and found in this study. The concurrent use of qualitative and quantitative approaches to data collection in this convergent parallel mixed methods study was useful in examining nurses' perceptions and experience of barriers and facilitators to research utilization in clinical practice.

Through interviews, we explored the major barriers of research utilization in our daily life which included mismanagement of time, increased nurse to patient ratio, and limited support for research utilization. The findings of quantitative results are also converged with interview data.

In quantitative part, insufficient time, lack of colleague support, unwillingness to try new ideas, late publication of research reports are the top major barriers reported by majority of the participants in survey.

Insufficient time is a major barrier reported by majority of the participants. All of the participants (98.6%) have also marked lack of adequate time as a major barrier in the quantitative analysis. While in the

qualitative analysis it is also a barrier that is described by interviewers. Description of time mismanagement as a major barrier is converged with quantitative findings. These results are supported by a study conducted by Aurang Zeb et al in Peshawar, Pakistan that reported insufficient time on job a major barrier to research utilization marked by 73% of the participants.¹⁴ Similarly, a study conducted in Saudi Arabia reported the lack of time a major barrier to research utilization.¹⁹ This was also found in a study conducted in Sweden where 176 RNs (37%) stated the insufficient time on job to implement new ideas a major barrier to research utilization.²⁰

Another barrier to research utilization is the high number of patient with respect to staff. So the workload is being increased. Increased workload converged the results of qualitative and quantitative findings. There is not enough time for every staff to get all the work done by the end of shift by sticking to EBP. These research findings are consistent with the results of a qualitative study conducted in Shanghai, China that reported increased workload and shortage of staff nurses a major barrier to research utilization and majority of participants reported it a major barrier.¹⁸

Limited support for research utilization is a barrier that was elaborated in the quantitative part and 94% of the participants reported the lack of adequate facilities in the health care setup to do EBP. In addition, qualitative analysis also showed that adequate facilities are needed for better implementation of research findings in nursing practice. Results of both studies are converged as lack of adequate facilities is reported as top barrier in quantitative and qualitative findings. Similar results were observed in a study conducted by Duncombe in Bahamas, where majority of the participants reported that inadequate support is a major barrier to research utilization.¹⁵

Both the qualitative and quantitative analyses indicate the facilitators of research usage. "Hiring of clinical instructors," "conducting of seminars," and "organizational support," were the top criteria addressed in interviews to encourage EBP adoption in the current study. In quantitative analysis the top four facilitators of research utilization are the employing of nurse researches, enhancing the managerial support, improving the understandability of research reports and the clinical focused research reports.

In this study, nurses discovered that they lacked clinical instructors who could help

them improve their knowledge and understanding of current best evidence from research and apply it to clinical practice. Employing of the nurses who has expertise in research and research base skills also act as a facilitator. It is marked by 98% of the participant as a moderate to greater extent. The findings of qualitative study are converged with quantitative statistics as majority of participants marked the need of skilled nurses for improvement in quality of patient care. While interviewer describe the hiring of clinical instructor is helpful in enhancing research base intervention or research utilization. These results are consistent to a study conducted by Younas (2020). He found that the 85% of the participants mark the hiring of some expert researcher, clinical instructor, or a peer is helpful in enhancing the research utilization.¹⁶ These study results are somehow related to study conducted in Australia in 2004. Where the 78% of the participants marked this as a moderate to greater extent facilitator.⁴ So we can say that now nurses are seeing it as a high level facilitator as the results of three different studies are somehow comparative but has large differences and may be according to regions.

Additionally, nurses in this study also frequently reported that educational activities are important in implementing research findings in clinical practice. The need of seminars also seen as a facilitator by the interviewers in research utilization. Creating behavioral compliance with the content of guidelines has been shown to require the continuous involvement of all staff in establishing new routines to utilize the guidelines. Majority of the interview data reported that conduction of seminars and education related activities can facilitate the nurses to uptake the EBP. The survey results are also converged with qualitative findings that reported 85% participants' view on need of seminars and in clinical setting. These study findings are consistent

CONCLUSION

The results of current study highlights the important barriers and facilitators to utilize research among Pakistani nurses. Most of the barriers experienced by Pakistani nurses are not similar to those experienced by nurses of other counties. In quantitative part, the top four barriers to research utilization reported by Pakistani nurses were "insufficient time on job, non-supportive staff, unwillingness of nurses to accept change, and research reports are not published fast. In qualitative part, time

to another qualitative study conducted in Hunan China, which stated that education and training session are necessary to facilitate EBP among nurses in hospital setting.¹⁷

Organizational support is another major factor reported by majority of the nurses to facilitate the uptake of research utilization in clinical practice. In the qualitative part, the organizational support came out the main focused facilitator that are consistent with quantitative part statistics where 95% of the participants had marked enhancing managerial support as a facilitator of moderate to greater extent. These study findings are somehow related to the study conducted in Malaysia in 2017.²¹

mismanagement, increased nurse to patient ratio, and limited support for research utilization" are the top barriers explored by majority of the nurses. While top three facilitators in quantitative part to encourage nurses to participate in research identified by participants in this study are "therapeutically relevant research, employing nurses as role model, and increasing managerial support". Top facilitators in qualitative part are "hiring of clinical instructor, conduction of seminars, and organizational support".

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