

Perceived Barriers in Research Utilization among Registered Nurses in Coimbatore, Tamil Nadu, India

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ABSTRACT

Objectives: This study was intended to trace the perceived barriers in research utilization among registered nurses.

Methods: This study adopted a descriptive study design, and it was conducted between January 2019 and May 2019 in Coimbatore, Tamil Nadu, India. A self-structured questionnaire with 29 structured items was administered to 150 registered nurses those working as a clinical nurse, educator, and administrative person. The data collected were analyzed using SPSS 20.0.

Results: Barriers in research utilization as perceived by the nurses are 'the research is not reported clearly, and readable,' 'administration will not allow for implementation,' 'nurse is unaware of the research,' 'facility is inadequate for implementation,' and 'literature result conflict the results.'

Conclusion: This study would help the nursing faculty give more importance to the research activities and frame and implement appropriate strategies to overcome the identified barriers, thereby improving their expertise in research use and evidence-based planning.

Keywords: Barriers, India, Perception, Registered Nurses, Research utilization

INTRODUCTION

People assume for providing a safe and excellent quality to patient care is the responsibility of nurses, but most importantly, focusing on research created specialized awareness/understanding that supports nursing education, practice, research, and management. Stevens¹ stated that the effect of evidence-based practice (EBP) has boomed across nursing education, science, and practice. EBP unites best research evidence with clinical knowledge and improves the care by including patient preferences. The application of nursing research findings leads to providing efficient and effective

patient care and providing the quality of nursing care².

Carrion et al.³ stated that EBP has a slowdown nature in the clinical and education areas. Moreover, the current research application has been a part of EBP to highlight education and clinical practice. In nursing research, the barriers to EBP have been discussed by various researchers across the globe. Umarani⁴ highlighted the top six barriers to EBP were i) low level of knowledge, ii) unavailability of resources, iii) organizational culture, iv) lack of administrative support, v) unclear workplace expectations and vi) poor understanding of statistics. Aurang et al.⁵ observed that the critical barriers in EBP

perceived by registered nurses were insufficient time, no access to research material, no authority to change the patient care, inadequate facility, and unavailability of equipment.

Based on this literature, it is revealed that the nurses are facing several barriers in utilizing nursing research, which would aid them in expertise EBP. To explore such barriers faced by nurses, this study aims to assess registered nurses' (RNs) perception of the barriers in the utilization of nursing research.

MATERIALS AND METHODS

A descriptive study design was used to reveal the barriers in research utilization, which were perceived by RNs in Coimbatore, Tamilnadu, India. This study was conducted between January 2019 and May 2019. Through email, a self-structured questionnaire was administered to 150 RNs with various designations. The questionnaire used consists of two parts. Part-1 deals with the demographic characteristics of nurses, such as education level, job title, the status of work, years of working, journal article publication, area of work, and Part-2 has Barrier Scale with four subscales of 29 items to obtain the perception of RNs' over the barriers in research utilization. Subscales are nurse characteristics (nurse - 9 items), quality of research (research - 7 items), organization characteristics (setting - 8 items), presentation, and accessibility of research (presentation - 6 items). An earlier study had also modelled the barriers scale and evaluated the barriers in using research outcomes in practice from the clinicians, administrators, and academician's perspective⁶. The respondents are instructed to provide a score with the level by which they notice an individual item as a barrier in using the research outcomes. Each item is assessed on a five-point Likert scale as follows: no opinion (1) to no extent (2), to a little extent (3), to a moderate extent (4), to a great extent (5).

STATISTICAL METHODS

Data analysis was done using Statistical Package for Social Science (SPSS) version 20 (Chicago, IL, USA). The descriptive statistics were applied to reveal the frequencies and rank of the items. A Cronbach's alpha reliability test was used to evaluate the internal consistency of the questionnaire. Confirmatory factor analysis (CFA) was applied to assess the validity of the questionnaire used in this study. A Chi-square test was used to determine the association between demographic variables and the subscales of the questionnaire used. The level of significance was set as 0.05 ($p < 0.05$).

RESULTS

Table 1: Demographic characteristics of the participants (N=150)

Variable	Subscales	N (%)
Age	Below 30 years	39 (26)
	31-40 years	74 (49.3)
	41-50 years	26 (17.3)
	50 & above	11 (7.3)
Job Title	Staff nurse	56 (37.3)
	Nurse supervisor	28 (18.7)
	Educationist	58 (38.7)
	Team leader	1 (0.7)
	Administrative role	7 (4.7)
Status of the Job	Full Time	149 (99.3)
	Part Time	1 (0.7)
Education	Baccalaureate	67 (44.7)
	Master	62 (41.3)
	Doctorate	21 (14)
Experience	Less than 5 years	38 (25.3)
	5-10 years	23 (15.3)
	More than 10 years	89 (59.3)
Area of Working	Medical ward	33 (22)
	Surgical ward	27 (18)
	OT	12 (8)
	Emergency department	7 (4.7)
	College	63 (42)
	Paediatric ward	6 (4)
	OBG	2 (1.3)
Article Published	Yes	115 (76.7)
	No	35 (23.3)

While reviewing the results, the overall alpha coefficient value is observed as 0.782, which showed that the variables measured the concept of the questionnaire can be rated as "Acceptable"⁷. The Kaiser Meyer Olk in (KMO) value is observed as 0.676, indicating that the collected sample size is significant for factor analysis. The results of Bartlett's test of Sphericity showed a significant value ($p < 0.05$). Therefore, the

sample was adequate. Factor analysis extracted 29 factors, which conjointly explained 71.55% of the variance in nurses' responses towards barriers in research through the Varimax rotation method.

Further, the results showed that the minimum item extracted from the 29 factors are found to be "The research has methodological inadequacy" with a value of 0.587.

Table 2: Barriers to research Utilization (Percentage of nurses scoring 4 and 5 on the Barriers Scale (n=150))

Subscales/Item	Rank	%
Nurse (Mean ± SD)		3.65 ± 0.386
The nurse does not see the value of research for practice (n=67)	24	45%
The nurse sees little benefit for self (n=64)	26	43%
The nurse are unwilling to change the new ideas (n=38)	29	25%
There is no documentation for change practice (n=63)	27	42%
The nurse does not feel capable of evaluating the quality of research (n=82)	18	55%
The nurse is unaware of the research (n=118)	3*	79%
The nurse feels the benefits of changing practice will be minimal (n=79)	20*	53%
The nurse is isolated from knowledgeable colleagues with whom to discuss the research (n=90)	15	60%
Setting/Organization (Mean ± SD)		3.87 ± 0.409
Administration will not allow for implementation (n=120)	2	80%
Physician will not co-operate for implementation (n=110)	8	73%
There is insufficient time on the job to implement new ideas (n=54)	28	36%
Other staff are not supportive of implementation (n=87)	16*	58%
The facilities are inadequate for implementation (n=119)	3*	79%
The nurse does not feel she / he has enough authority to change patient care procedure (n=95)	12	63%
The nurse does not have time to read (n=87)	16*	58%
The nurse feels results are not generalization to own setting (n=76)	22	51%
Research (Mean ± SD)		3.98 ± 0.548
The research has methodological inadequacy (n=93)	13	62%
The conclusion drawn from the research are not justified (n=92)	14	61%
The research has not been replicated (n=113)	6	75%
The literature results conflicting results (n=115)	5	77%
The nurse is uncertain whether to believe the results of the research (n=111)	7	74%
Research reports/ article are not published fast enough (n=100)	9*	67%
Communication (Mean ± SD)		3.77 ± 0.416
Implication for practice are not made clear (n=66)	25	44%
Research reports / article are not readily available (n=81)	19	54%
Statistical analysis are not understandable (n=79)	20*	53%
The relevant literature is not compiled in one place (n=101)	9*	67%
The amount of research information is overwhelming (n=98)	11	65%
The research is not relevant to the nurse practice (n=73)	23	49%
The research is not reported clearly and readable (n=137)	1	91%

* items having same ranking

The results of the demographic characteristics are observed in Table 1. Nearly half of the nurses (49.3%; n=74) were observed under the age group 31-40 years, and only 7.3% (n=11) of respondents were found under the age group 50 years. The distribution of job title among respondents was observed as educationalist 38.7% (n=58), followed by Staff nurse 37.3% (n=56), Nurse supervisor 18.7% (n=28), Administrative role 4.7% (n=7), and Team leader 0.7% (n=1). It is observed that only one respondent (0.7%) worked part-time, while all the remaining (99.3%) worked full time in hospitals. Among respondents, 44.7% were Baccalaureate, 41.3% were Master degree holders, and only 14% were Doctorate. Furthermore, about

59.3% of respondents had > 10 years of working experience. The distribution of the working area among respondents was found as high in the College (42%; n=63) and low in OBG (1.3%; n=2). Interestingly, 76.7% (n=115) of respondents have published articles in their name as author and co-author, whereas 23.3% of respondents showed no experience in publishing articles. The barriers scale of 29 items with rank and mean ± standard deviation of subscales is observed in Table 2. Among four subscales, the maximum projecting barrier is found with the subscale "Research" (3.98 ± 0.548), and the minimum is observed with the subscale "Nurse" (3.65 ± 0.386). The five barriers projecting with the maximum percentage value are identified. Those are

“The research is not reported clearly, and readable” (91%, n=137), “Administration will not allow for implementation” (80%, n=120), “The nurse is unaware of the research” (79%, n=118), “The facilities are inadequate for implementation” (79%, n=119), and “The literature results in conflicting results” (77%, n=115).

Further, the distribution of the respondents perceived with positive and negative scores is described in Table 3. The maximum positive barrier subscale perceived by the respondents is “Settings/Organization” (88%). On the other hand, the maximum negative barrier subscale perceived by the respondents is found as “Nurse” (23.3%).

Table 3: Relation between the Subscales and participants perception (n=150)

Subscales	Negative n (%)	Positive n (%)
Nurse	35 (23.3)	115 (76.7)
Setting/Organization	18 (12)	132 (88)
Research	23 (15.3)	127 (84.7)
Communication	26 (17.3)	124 (82.7)

Chi-square results showed that there is a significant association between "Communication" and the degree of "Education" (p<0.05). In contrast, other subscales showed no significant association with “Education” (p>0.05). Further, no significant association is observed between all subscales and levels of working experience (p>0.05) (Table 4).

Table 4: Association between respondents’ education, experience with their subscale perception

Education	Baccalaureate		Master		Doctorate		Chi-square (p-value)
	Positive n (%)	Negative n (%)	Positive n (%)	Negative n (%)	Positive n (%)	Negative n (%)	
Nurse	47 (70.1)	20 (29.9)	49 (79)	13 (21)	19 (90.5)	2 (9.5)	4.024 (0.134)
Organization	58 (86.6)	9 (13.4)	56 (90.3)	6 (9.7)	18 (85.7)	3 (14.3)	0.551 (0.759)
Research	55 (82.1)	12 (17.9)	52 (83.9)	10 (16.1)	20 (95.2)	1 (4.8)	2.181 (0.336)
Communication	50 (74.6)	17 (25.4)	54 (87.1)	8 (12.9)	20 (95.2)	1 (4.8)	6.188 (0.044)*
Experience	Less than 5 years		5 – 10 years		More than 10 years		Chi-square (p-value)
	Positive n (%)	Negative n (%)	Positive n (%)	Negative n (%)	Positive n (%)	Negative n (%)	
Nurse	29 (76.3)	9 (23.7)	18 (78.3)	5 (21.7)	68 (76.4)	21 (23.6)	0.039 (0.981)
Organization	32 (84.2)	6 (15.8)	21 (91.3)	2 (8.7)	79 (88.8)	10 (11.2)	0.804 (0.669)
Research	32 (84.2)	6 (15.8)	21 (91.3)	2 (8.7)	74 (83.1)	15 (16.9)	0.945 (0.623)
Communication	27(71.1)	11 (28.9)	20 (87)	3 (13)	77 (86.5)	12 (13.5)	4.793 (0.091)

*Statistically significant at 0.05 level

DISCUSSION

This study ranked the top ten barriers in which four items from the subscale “research”, three items from “organization”, two items from “communication”, and one item from “nurses”. Whereas, Buhaid et al.⁸ identified the top ten ranked observed barriers comprising six items of “organization” subscale and four items of “presentation” subscale. Out of which, the top three ranked barriers as i) lack of consultant to change practice, ii) inadequate facilities, and iii) time constraints. In this study, five items are identified from the top ten barriers as the key barriers in research utilization among nurses. Those include i) “The research is not reported clearly and readable” (Subscale: Communication), ii) “Administration will not allow for implementation” (Subscale:

Setting/Organization), iii) “The nurse is unaware of the research” (Subscale: Nurse), iv) “Facility are inadequate for implementation” (Subscale: Setting / Organization), v) “The literature result in conflicts with the results” (Subscale: Research). These results are in line with the findings of previous studies as follows. An earlier study observed nurse, and organizational characteristics are the significant barriers, including, i) inadequate time, ii)poor authority to change, and iii) inadequate research knowledge and awareness⁹.Schoonover and Heather¹⁰also revealed the barriers in using research utilization as i) poor authority to alter patient care procedure, ii) inadequate time for reading research, and iii) inadequate awareness about research. It is advised to use the organizational strategy through staff

development professionals to impact research knowledge and utilization. Zhou et al.¹¹ found the important barriers are "insufficient time on the job", followed by "inadequate knowledge" and "devastating research publication." Job satisfaction and research experience, working pressure, and clinical experience were recognized as significant associated factors for research. Bostrom et al.¹² also reported the barriers in the utilization of nursing research as i) nurses are remote from an educated colleague for discussing the research, ii) insufficient facilities for implementation and iii) poor compilation of relevant literature in one place.

A systematic review by Sanjari et al.¹³ identified the top seven barriers as i) nurses are away from an experienced colleague for consulting research, ii) inadequate time at work to execute new concepts, iii) the nurse have inadequate time for reading research, iv) the nurse felt inadequate authority to alter patient care procedure, v) insufficient facilities for implementation, vi) poor co-operation from the physician with implementation and vii) the lack of compilation of related literature in one place. Besides, Rosaline¹⁴ identified only 20.8% of nurse shaving an undergraduate degree participated in research utilization. Managing pain and preventing pressure ulcers in management were identified as the most common areas under the existing research utilization. Rural isolation and inadequate nursing research consultants were recognized as barriers to research utilization and EBP.

Moreover, this study revealed that RNs perceived the maximum positive barrier subscale as "Settings/Organization" and the maximum negative barrier as "Nurse". In contrast, Kang⁸ revealed the nurses' rank score as the maximum for the communication domain, which was the key barrier and minimum for the adopter domain. Besides, this study observed a significant association between the communication and degree of education,

which is in accord with the results of Kang¹⁵.

CONCLUSION

Out of the top ten barriers, this study identified five items as the key barriers in research utilization among RNs. Further, those RNs perceived the maximum positive barrier subscale as "Settings/ Organization, and the maximum negative barrier subscale as "Nurse." The level of education of RNs is significantly related to the subscale "Communication". This study acts as a stimulus and evidence for nursing professionals to realize the barriers in research utilization and develop and implement the appropriate strategies to overcome these barriers, thereby improving their research productivity and expertise in EBP.

Limitations and Recommendations

As this study is limited only to the RNs working in Coimbatore, Tamil Nadu, India, the generalization of its findings is questionable. In the future, this study can be conducted with a large sample of RNs' working across various sectors in Tamilnadu, India. Moreover, the difference in the perception of the barriers in research utilization among RNs working in public and private sectors can be studied.

Financial support: None

Conflicts of Interest: None

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How to cite this article: Kaliyaperumal R, Raman V, Rajakumari A. Perceived barriers in research utilization among registered nurses in Coimbatore, Tamil Nadu, India. *Int J Health Sci Res.* 2020; 10(12):200-205.
