

# EXPLORING AWARENESS ON EVIDENCE-BASED PRACTICE AND RESEARCH UTILISATION IN CRITICAL CARE NURSES IN SELECTED HOSPITALS IN THE ETHEKWINI DISTRICT KWAZULU-NATAL

**J.P. Almaze**

University of KwaZulu-Natal, Durban

**W. Emmamally**

School of Nursing and Public Health,  
University of KwaZulu-Natal, Durban  
Emmamally@ukzn.ac.za

## ABSTRACT

In the critical care context, the complexity of patients' conditions necessitates an evidence based approach to care that involves critical appraisal of available research and an amalgamation of research findings with clinical expertise and patient preferences to provide best care practices. Despite the rapid growth in research on best care practices in the critical care setting, the translation of these findings into practice has been slow. For an EBP culture to prevail in critical care areas, critical care nurses need to champion this practice and challenge traditional practices. This article explores the awareness of critical care nurses (CCNs) regarding evidence-based practice (EBP) and research utilisation in selected hospitals in the Ethekwini district in KwaZulu-Natal. A quantitative exploratory study design was used. A questionnaire, which included structured and open-ended questions, was used to collect data from a convenient clustered sample of CCNs from one tertiary public hospital and one private hospital. Of the 80 CCNs, 78.7% were familiar with the term EBP and 21.3% were unfamiliar with the term. The majority, 63%, of the CCNs responded positively regarding the



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importance of EBP. However they acknowledged many barriers, both personal and organisational, towards research utilisation. For a culture of EBP to prevail within critical care settings, hospital management must be committed to this initiative by providing all nurses with opportunities for training and incentives to nurses who are involved in EBP activities and research utilisation.

**Keywords:** critical care nurse, evidence-based practice, research utilisation

## BACKGROUND

Growing competitiveness in the health care setting coupled with increased demands for quality patient outcomes have resulted in health care professionals seeking innovative approaches to provide excellence in health care practice. One such approach is evidence-based practice (EBP) as it provides a platform to integrate best evidence with clinical expertise considerate of patient's values to effectively handle clinical issues and provide improved patient care (Majid, Foo, Luyt, Zhang, Theng, Chang and Mokhtar, 2011:229). Awareness and access to current evidence do not constitute evidence-based practice. For evidence to be translated into best care practice, nurses must rigorously select current evidence that is appropriate and applicable to the health care and patient context. This best care practice must then be utilised by nurses to effect positive patient outcomes (Watts, 2011:35, 36).

The market ethos of current critical care settings is to provide quality care that is defined by efficiency, safety, cost effectiveness and aligned to clients' preferences and needs. This ethos necessitates a shift from practices steeped in tradition and routine to implementing solutions that are relevant to current practice (Makic, VonRueden, Rauen, Chadwick, 2011:38). The South African critical care context faces additional constraints with regards to shortages of skilled and qualified CCNs, limited resources, as well as patients with challenging disease profiles (De Beer, Brysiewicz & Bhengu, 2011:10). Despite these constraints appropriate decisions must be made to promote recovery of these patients. EBP is an approach that enables CCNs to utilise best evidence available to improve patient outcomes while containing costs, and meeting clients' expectations.

Incorporating EBP in daily practice is often sabotaged by personal and organisational barriers. These barriers include the attitude of nurses to undertake research (lack of knowledge about research, lack of communication, lack of communication from knowledgeable colleagues, weakness in evaluating research), organisational constraints (time, lack of authority, unsupportive personnel) and research communication (not readily available reports, research jargon and literature) (Panagiari, 2008:25).

## STATEMENT OF THE RESEARCH PROBLEM

Despite the documented benefits of EBP in positive patient outcomes, clinical decision making is largely influenced by traditions and expert opinion. Some of these practices may be detrimental to patients especially in the critical care environment where the complexity of disease processes increases patient vulnerability (Makic, VonRueden, Rau, Chadwick, 2011:38, 58). The strength of an EBP initiative lies not in the availability of the best available research but in its emphasis on patients' values and needs. In multicultural, low resourced countries such as South Africa, commitment to EBP in hospital settings will ensure not only that patient care is aligned to best clinical research but that this care is appropriate, cost effective and client centred.

There is an explosion of research related to best nursing practice in the critical care context; however, awareness of the findings of these studies does not guarantee adherence or translation of this awareness into practice. Squires, Estabrooks, Gustavsson and Wallin (2011:17) concluded that a nurse's attitude towards research is consistent to the nurse's utilisation of research, that is, for CCNs to utilise the best available evidence in their practice, they must be convinced that interventions based on evidence are superior to interventions based on tradition and habits (Labeau, Vandijck, Claes, Van Aken & Blot, 2007:373). The South African critical care arena is faced with the enormous challenge of providing care to a vulnerable population with a multiplicity of illnesses by a severely constrained population of skilled and knowledgeable nurses (Gomes, 2010:5). Against this backdrop it is imperative that CCNs are not merely aware of current scientific evidence, but that they utilise guidelines to make decisions on patient care that are applicable and appropriate. Thus it is important to determine the CCNs' awareness of EBP and research utilisation in the South African context. Focused strategies to address areas of concern or improvement may then be developed. Moreover, it could provide a nursing perspective on the challenges that exist to EBP and research utilisation inherent and unique to the South African critical care context and how these may be overcome.

## PURPOSE OF THE STUDY

To explore the awareness of critical care nurses regarding EBP and research utilisation in selected hospitals in the Ethekwini district in Kwazulu-Natal province.

## DEFINITION OF KEY TERMS

**Critical care nurse** refers to a nurse who is registered with the South African Nursing Council with a basic general nursing diploma or degree, and is working in the critical care setting for longer than six months.

**Evidenced-based practice** is the combination of best research findings with the clinical expertise (Watts, 2011:35). In this study it is operationalised as an amalgamation of the best research findings, clinical expertise of the CCNs and patients' values to guide best care practice within the critical care environment.

**Research utilisation** in this study refers to the actual application or translation of best evidence guidelines by CCNs into practice, programmes and policies in order to improve patient care outcomes.

## RESEARCH METHODOLOGY

The study utilised a quantitative research design to explore the awareness of CCNs regarding evidence-based practice and barriers to research utilisation in selected hospitals in the eThekweni district in the KwaZulu-Natal province.

The study was conducted in the critical care units of one private hospital and one tertiary referral public hospital in the KwaZulu-Natal Durban metropolitan area. Both hospitals are known for their commitment towards best care practices and encourage research initiatives within and outside the hospitals. One public and one private hospital settings were conveniently sampled to identify if the data generated would reveal differences with regard to the awareness of EBP and research utilisation among CCNs employed in these settings.

The study population consisted of CCNs working within the CCUs of the two hospitals. A convenience cluster sampling method was used, where each critical care unit was seen as a cluster. The private hospital had three critical care units and the tertiary hospital had 10 critical care units. A sample size of 80 CCNs from all units was used. The researcher identified the unit and the sample was selected from the duty roster that contained the names from the population of nurses practising in these settings. The inclusion criteria were that the CCNs attested to having had minimum of six months' experience working in the unit and consented to participate in the study.

Data were collected using a self-administered questionnaire comprising both structured and open ended questions. The instrument included sections on the demographic characteristics of respondents, the awareness of respondents regarding EBP, the organisational and personal barriers of CCNs towards research utilisation and CCNs' recommendations to increase their involvement in EBP and research utilisation.

All the sections of the tool were developed by the researcher, except the questionnaire on the barriers to research utilisation. This questionnaire was developed in the USA in 1987 by Funk, Champagne, Tornquist and Wiese. Permission to use this questionnaire was obtained.

The barrier to the research utilisation section has an established reliability of Cronbach's alpha of 0.65-0.80 (Funk, Champagne, Wiese and Tornquist, 1991).

In addition, both the researcher and the supervisor scrutinised the first batch of completed questionnaires received from respondents to confirm reliability to this study context and sample. A pilot test was conducted of the remaining questionnaire that was developed by the researcher and therefore did not have established reliability. The results of the pilot study were used to identify and correct questions that were ambiguous and needed more clarity. The findings of the pilot study were not included in data analysis.

Content validity was established by ensuring alignment of the questionnaire to the purpose and objectives of the study.

Data collection occurred in the month of August 2014. On securing permission from relevant authorities, appointments were made with the unit manager of each critical care unit. A convenient on duty time was selected to address the staff. A room was secured to ensure privacy while the explanation of the study and filling of the questionnaires were done. A letter and consent form were attached to the questionnaire explaining the purpose of the study. Once consent was obtained, questionnaires were distributed to participants and on completion they were placed into sealable envelopes.

The Statistical Package of the Social Science (SPSS) version 21 was used to analyse data. The data was presented in tables, percentages and frequency distributions. The data from open ended questions were analysed by identifying common responses and then grouping these responses into categories.

## ETHICAL CONSIDERATIONS

Ethics approval was obtained from the research and ethics committee of the UKZN and the ethics committees of the chosen hospitals. Confidentiality, privacy and anonymity were maintained by ensuring that the questionnaires were completed anonymously so that data could not be traced back to the respondents. Informed consent (written) was also obtained from the participants with an assurance that they were under no obligation to participate in the study and could withdraw at any time. Data completed questionnaires were kept in a safe at the university. Electronic data was stored on a hard drive, and only the researcher has the computer password to guarantee confidentiality. All data will be destroyed after five years.

## RESULTS

Eighty questionnaires were handed out, and eighty filled questionnaires were received. The response rate was one hundred per cent.

**Table 1:** Demographic information

VARIABLE	FREQUENCY (n=80)	PERCENTAGE
<i>Gender</i>		
Female	72	90
Male	8	10
<i>Age</i>		
20 – 30 years	12	15
31 – 40 years	38	47.5
41 – 50 years	17	21.3
> 50 years	13	16.2
<i>Level of education</i>		
Diploma	60	75
Bachelor's degree	20	25
<i>Years of nursing experience in critical care</i>		
1- 5 years	23	28.8
6 – 10 years	26	32.5

The demographic information of the respondents is summarised in Table 1. The mean age of the respondents was 39.3 years. The majority of the respondents, 90% (n =72), were female and 10.0% (n=8) were male. Most of the CCNs (47.5 %, n = 38) were in the age group ranging from 31–40 years. This was followed 21.3% (n= 17) in the age group ranging from 41–50 years, and lastly 16.2% (n=13) in the age group over 50years. The respondents who participated the least (15%, n= 12) in EBP and research utilisation were in age group 20–30 years.

All respondents had finished nursing school. Seventy five percent (n=60) had qualified with a diploma in nursing followed by 25.0% (n=20) who qualified with a Bachelor degree in nursing. With regards to nursing experience in the critical care unit, 38.7% (n=31) had over 10 years of experience followed by 32.5% (n=26) who had between 6–10 years of experience and 28.8% (n = 23) who had between 1–5 years of experience in the critical care setting.

### Awareness of CCNs of EBP and barriers to research utilisation

Structured questions were used to explore awareness regarding EBP and barriers to research utilization. The following sub-sections represent such questions:

#### *Familiarity with the Term EBP*

Most respondents 78.8% (n=63) were familiar with the term EBP and 21.2 % (n=17) were unfamiliar with the term.

### ***First learnt about EBP***

Forty percent (n=32) of the respondents had first learnt about EBP at the nursing college or university. This was followed by 31.2% (n=25) who had learnt about EBP during their nursing practice and 8.8% (n=7) had learnt about EBP from attending a workshop/seminar. The remaining 20% (n=16) represented the CCNs who never learned about EBP before.

### ***Definition of EBP***

Only 1.3% (n=1) defined EBP as patient preferences, 36.2% (n=29) defined it as the best available evidence and 18.8% (n=15) as clinical expertise. The majority, 43.7%, of the CCNs (n=35) combined the previous three definitions into a single definition.

### **Frequency in seeking current clinical evidence**

Regarding how frequently CCNs updated themselves on new evidence and guidelines regarding clinical practice, 22.5% (n=18) reported that they looked for information less than once per month. This was followed by 28.7% (n=23) who looked for current clinical information occasionally (1–2 per month), 16.3% (n=13) updated themselves on a weekly basis and 22.5% (n=18) stated that they updated themselves on new evidence and guidelines regarding clinical practice several time a week. The minority 10.0% (n=8) never looked for information to update their clinical practice. In addition 13.8% (n=11) of the CCNs subscribed to a journal and 86.2% (n=69) of the sample size did not subscribe to any journal.

### **Resources used to update information on clinical practice**

More than half the respondents (55%; n = 44) searched the internet for information on clinical practice. This was followed by 20% (n=16) who asked their colleagues for information. Only 18.7 % (n =15) searched the journal data base and 1.3% (n=1) attended workshops and conferences. The remaining 5% (n=4) did not refer to any resources.

**Table 2:** EBP and research utilisation activities

Involvement in EBP and research utilisation	Research participation		Development of clinical guidelines		Solution of a clinical research problem	
	n	%	n	%	n	%
Not all	40	50	48	60	40	50
Once	26	32.5	19	23.75	20	25
2 -3 times	11	13.75	9	11.25	15	18.75
> 3 times	3	3.75	4	5	5	6.25

Table 2 summarises responses to EBP and research utilisation activities. The majority 50% (n=40) had never participated in research, 60% (n=48) had never been involved in guideline development and 50% (n= 40) had never participated in finding solutions to clinical research problems. A minimum of 3.75% (n=3) reported having participated in research, 5% (n=4) had been involved in guideline development and 6.25% (n= 5) had participated in finding solutions to clinical research problems.

**The availability of resources for EBP within the hospital**

Of the respondents, 53.7% (n=43) stated that printed materials were available, followed by 46.3% (n = 37) of the CCNs who mentioned that other information resources were also available, which included online resources.

**CCNs recommendations towards EBP and research utilisation**

The following recommendations were obtained from the open ended questions. The common responses were identified and then grouped into categories. Responses included, ‘resources for conducting research must be made available’. CCNs also recommended that ‘more staff must be sent for workshops, conferences and in-service training to motivate CCNs to be more proactive and enthusiastic regarding EBP and research utilization’.

**Table 3:** Response to barriers in research utilisation

		To no extent	To a little extent	To a moderate extent	To a great extent	No opinion
Percentage %						
16	Research reports/articles are not readily available	32.5	26.3	25.0	7.5	8.8
17	Implications for practice are not made clear	21.3	27.5	30.0	12.5	8.8



		To no extent	To a little extent	To a moderate extent	To a great extent	No opinion
18	Statistical analyses are not understandable	36.3	12.5	32.5	11.3	7.5
19	The research is not relevant to the practice	36.3	12.5	26.3	13.8	11.3
20	I am unaware of the research	33.8	16.3	30.0	7.5	12.5
21	The facilities are inadequate for implementation	31.3	15.0	36.3	10.0	7.5
22	I do not have time to read research	27.5	20.0	28.8	11.3	12.5
23	The research has not been replicated	27.5	23.8	27.5	11.3	10.0
24	I feel the benefits of changing practice will be minimal	28.8	18.8	25.0	20.0	7.5
25	I am uncertain whether to believe the results of the research	32.5	21.3	23.8	11.3	11.3
26	The research has methodological inadequacies	36.3	21.3	26.3	11.3	5.0
27	The relevant literature is not compiled in one place	31.3	21.3	35.5	11.3	1.3
28	I do not feel I have enough authority to change patient care procedures	26.3	22.5	27.5	11.3	12.5
29	I feels results are not generalizable to own setting	27.5	17.5	28.8	16.3	10.0
30	I am isolated from knowledgeable colleagues with whom to discuss the research	28.8	18.8	26.3	15.0	11.3
31	I am unwilling to change/try new ideas	28.8	17.5	20.0	20.0	13.8
32	The amount of research information is overwhelming	26.3	18.8	30.0	15.0	10.0
33	I do not feel capable of evaluating the quality of the research	36.3	17.5	25.0	15.0	6.3
34	I see little benefit for myself	38.8	18.8	26.3	13.8	2.5
35	I do not have computer skills	26.3	17.5	21.3	15.0	20.0
36	Administration will not allow implementation	30.0	17.5	28.8	17.5	6.3

		To no extent	To a little extent	To a moderate extent	To a great extent	No opinion
37	Administration does not support EBP implementation	28.8	16.3	27.5	20.0	7.5
38	Other staff are not supportive of implementation	23.8	22.5	27.5	15.0	11.3
39	There is insufficient time on the job to implement new ideas	31.3	17.5	23.8	16.3	11.3
40	Access to research evidence is poor (slow or no computers, or data bases)	25.0	20.0	33.8	10.0	11.3
41	There is resistance to make changes in the work setting	31.3	15.0	30.0	3.8	20.0
42	I do not have access to the library at work	25.0	23.8	23.8	18.8	8.8
43	There is not support or incentives for clinical practice development	20.0	26.3	28.8	18.8	6.3

Table 3 summarises the responses to the BARRIER Scale, which was used to identify the perceived barriers to research use among the respondents.

## DISCUSSION

In this study it was identified that most of the respondents (47.5%, n=38) were in the age group 31–40 years, whereas the respondents who participated the least 15% (n= 12) in EBP and research utilisation were in age group 20–30 years. Additionally the study elicited a 100% response rate, where 75.0% (n=60) had qualified with a diploma in nursing followed by 25.0% (n=20) who qualified with a Bachelor degree in nursing. This correlates with the research proposition that a culture of EBP be embedded in undergraduate nursing curricula so as to produce graduates with a positive disposition towards EBP and research utilisation (Dugdall & Watson, 2009:1442).

A significant number of respondents in the study were familiar with the term EBP, having first heard of EBP at a nursing college or university, followed by nursing practice and lastly at seminars. Of note is that only 40% of the participants had exposure to EBP at a nursing college or university, 31.2% were exposed to the concept in nursing practice and a significant 20% never heard of EBP. A study by Ez elerab, El Salam, Behalik and Eltayeb (2012:1067) reported similar findings. This indicates the importance of inclusion of EBP and research utilisation in curriculums of educational programmes and in-service programmes offered in nursing practice.

More than half of the respondents defined EBP as a combination of clinical expertise, current evidence and patient values. This is promising for research utilisation in the South African multi-cultural context, in that CCNs have identified the superior quality of EBP, as that of utilising research that is applicable, appropriate and acceptable to the individual client's needs (Watts, 2011:35).

There was a positive response regarding the frequency of seeking current clinical evidence with 16.3% (n=13) respondents updating themselves on new evidence and guidelines regarding clinical practice on a weekly basis. 22.5% (n=18) stated that they sought current clinical evidence several times a week. The majority (55%, n=44) of the respondents identified the internet as their resource for obtaining current evidence and guidelines on nursing practice. Notably 20% (n=16) of the respondents also consulted with colleagues and peers. Although an expert opinion is valuable, it should not be the guiding force of clinical practice in the presence of evidence-based guidelines. Despite the CCNs' positive response to seeking current clinical evidence, only 13.8% (n=11), subscribed to a journal or searched journal data bases. This correlated with the study findings by Nesbitt (2013:896), although EBP was identified as an important aspect of nursing care, few nurses felt comfortable with finding research articles, appraising evidence, or using research to guide their practice. These findings were also evident in the study by Ez elarab et al. (2012:1068), where respondents rarely appraised articles, nor performed efficient literature searches. This reluctance and uneasiness of CCNs to engage with journals and literature searches are significant as the journey of embracing EBP in clinical practice begins with enthusiastic literature searches for the best clinical evidence available.

To ensure safe, cost effective patient care and abandon practices that are not evidence based, CCNs are not merely accountable for appraisal and implementation of EBP, they must take on the mantle as generators of evidence-based guidelines for nursing practice (Labeau et al., 2007:372; Makic et al., 2011:38; Whitcomb, Roy and Blackman, 2010:S38). An overwhelming response (50%, n=40) had never participated in research, 60% (n=48) had never been involved in guideline development and 50% (n= 40) had never participated in finding solutions to clinical research problems. These findings impact greatly on nursing standards in the South African critical care context and practice as active involvement in research provides more credibility and autonomy to nurses in their clinical space (Wheeler, Hardie, Schell and Plowfield, 2008:8).

Fifty three per cent of the respondents, (n=43) indicated that printed materials were available, followed by 46.3% (n = 37) of the CCNs who mentioned that other information resources were also available, which included online resources. This indicates a commitment to EBP and research utilisation by management in providing information resources and guidelines, which is integral to enhancing a culture of EBP (Whitcomb, Roy and Blackman, 2010:S39). Organisational support in the form of

provision of educational programmes and material is necessary to heighten research awareness (Sheriff, Wallis & Chaboyer, 2007: 367).

The gap from research to practice exists in all levels of the nursing profession, with nurses often failing to recognise the link between research and practice (Sheriff, 2007:364). This was apparent as a significant percentage of CCNs, when asked to rate the barriers to research utilisation, responded that these barriers did not impede their utilisation of research in practice. This indicated that they were not aware of the link between EBP and research utilisation. Without this understanding EBP guidelines will not be translated to their daily practice.

The greatest barriers to research utilisation in the study summarised in The Barrier scale to research utilisation included 'see little benefit for self', 'statistical analyses are not understandable', 'research is not relevant to practice', 'the research has methodological inadequacies', 'I do not feel capable of evaluating the quality of research' and 'I am unaware of research'.

Other barriers identified by the respondents included, 'insufficient time on the job to implement new ideas', 'resistance to make changes at work' and 'facilities are inadequate for implementation'. Similar barriers to research utilisation have been cited by other studies (Ez elarab et al., 2012:1066; Sheriff et al., 2007:364). This indicates that despite the strategies generated by research studies to overcome barriers (Jensen, 2012:15; Yoder, Kirkley, McFall, Kirksey, Stalbaum and Sellers, 2014:36; Majid et al., 2011:229), considerable personal, logistical and management barriers still exist. Until nurses personally commit to the vision of EBP and research utilisation, their practice will continue to follow traditional practices. The impetus to become technologically savvy and engage with literature and articles will remain barriers to best care practice (Sheriff, 2007:364).

The respondents recommended that patients/clients embrace the changes in nursing care. To promote a culture of EBP, there must be support from health care management and the community. Respondents described feeling like a novice researcher and needing reassurance when undertaking nursing research. The CCNs believed that the research they undertake must be recognised by employers and incorporated into clinical practice. This would create opportunities for them to utilise research knowledge and skills they had acquired in their basic education and motivate them towards developing greater skills in EBP and research utilisation.

## RECOMMENDATIONS

The researchers suggested that greater emphasis be placed on EBP and research utilisation in educational programmes. Undergraduate nurses must be socialised early to the concepts of EBP and research utilisation. This would allow for development of skills in appraising and generating research. It would form part of their repertoire as graduate nurses, to be disseminated to colleagues in the practice setting. Hospital

management should encourage nurses to be involved in research and to utilise EBP in their practice. Management must acknowledge the initiatives of CCNs who generate evidence-based research guidelines or implement EBP in their practice. Further research on enabling strategies or guidelines to translate awareness of EBP to practice is recommended.

## LIMITATIONS

Data collection occurred when respondents were on duty. Due to time constraints, respondents felt that the questionnaire was lengthy. A larger study is recommended that includes nurses from hospitals situated in rural areas, so that findings can be generalised not only to KwaZulu-Natal but to the rest of South Africa.

## CONCLUSION

Critical care nurses are expected to keep abreast of current research studies and apply research-based findings in their practice. Findings of this study indicated an awareness of EBP and research utilisation. However, these approaches have not become a way of practice among respondents. The implication is that patients continue to receive care that, though based on scientific principles, may not be current and the best available evidence that is sensitive to patient preferences. Strategies must be implemented to convince CCNs that best practice is evidence-based practice and equip them with skills to participate in EBP and engage with enthusiasm in research utilisation.

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