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# **Nurses and Use of Research Information in Clinical Practice: a Case Study of the University Teaching Hospital in Zambia**

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## **Abstract**

The main objective of this study was to investigate nurses' use of research information in their clinical practice at the University Teaching Hospital in Lusaka, Zambia. A case study that utilised both qualitative and quantitative methods of data collection was adopted. Data was collected using a questionnaire in 2015. Quantitative data was analysed using SPSS and qualitative data was analysed thematically. A purposive sample of 60 practicing nurses was used, 57 questionnaires were returned, giving a response rate of 95%. 54% of the nurses indicated that they used research information in their clinical practice. 12.28% of the nurses used research information very often in their clinical practice. Most of the nurses were prompted to seek information because of: emergency of new cases, to update themselves, to provide quality services, emergency of new technologies and due to a high disease burden. The importance of using research information by nurses in clinical practice has been clearly articulated by researchers.

**Keywords:** Evidence Based Practice, Research Utilisation, Research Information, Nursing Practice.

## **Introduction**

Decision making in health care has changed dramatically, with nurses expected to make choices based on the best available evidence and continually reviewing them as new evidence comes to light (Pearson et al., 2007). It is a global challenge for nurses to scrutinise their practices and provide healthcare informed by current scientific knowledge (World Health Organisation, 2004). The capacity to provide evidence-based practice is one of the core competencies all healthcare professionals should possess in order to meet the needs of the 21st century healthcare system. In this regard, researchers have stated that clinical decision making is an integral part of nurses work and vital to health outcomes for patients. They argue that Clinical Decision Making, if based on reliable decision making criteria arising out of evidence can constitute a legally defensible position for the nurse in the event of a malpractice accusation (Deegan, 2013). Moreover, nurses' ability to recognise changes in the patient's physical condition is crucial as they have meaningful interactions with patients, frequently and for longer periods than any other health professional; and are therefore, likely to be the first link in the causal chain between the detection of complications and the commencement of corrective interventions (Gregory, 2011; Levett-Jones et al., 2010).

Zambia likewise, recognises health as one of the priority sectors that contribute to the well-being of the nation and, therefore, remains committed to providing quality health services to all its citizens. Zambia has a high burden of disease, which is mainly characterised by high prevalence

and impact of communicable diseases, particularly, Malaria, Human Immunodeficiency Virus (HIV) and *Acquired Immune Deficiency Syndrome* (AIDS), Sexually Transmitted Infections (STIs), and Tuberculosis (TB), and high maternal, neonatal and child morbidities and mortalities (Zambia. Ministry of Health, 2012). The country is also faced with a rapidly rising burden of non-communicable diseases, including mental health, diabetes, cardio-vesicular diseases, hypertension, chronic respiratory disease, blindness and eye refractive defects, oral health problems and violence. In addition, health information systems are one of the major challenges the country is faced with and this includes access and usage of information by nurses (Zambia. Ministry of Health, 2012).

Due to the high disease burden, nurses in Zambia have a huge role to play in order to help in reducing the load. There is need therefore, for nurses to use research information in clinical practice and to effectively use strategies for extracting relevant information from many publications that are available. The quality of information that nurses demand and how effectively they evaluate and use it for clinical decision making may influence patient outcomes and ultimately, the part nurses play in the delivery of health care. Nursing practice is information intensive; the rapid growth of information means that nurses cannot rely on information acquired as students and must therefore constantly update their practice (Royle and Blythe, 1998). It is for this reason that nurses need to familiarise themselves with high quality research to help them make justifiable decisions in clinical practice and justifies a study such as this one.

Nurses need evidence based information (EBI) for effective patient care and better patient outcomes because in the majority of cases, nurses constitute the majority of hospital clinical employees and are the most frequently consulted resource in the health care system. Nurses are also responsible for not only implementing physicians and surgeons clinical orders or prescriptions but also for maintaining constant surveillance over their patient's health. Moreover, nurses care for the sick and provide them assistance with physical and psychological needs, until they achieve stability, regain their previous state of wellness or achieve new levels of functioning. Furthermore, nurses also gather and transmit or communicate information from patients to patients' families and to other health care providers. In addition, hospital nurses are responsible for coordinating all care activities for patients care. Information, is therefore a very critical tool for nurses and how they acquire and use that information determines their performance (Corcoran-Perry and Graves, 1990). In general, nursing includes the promotion of health, prevention of illness, and the care of the ill, disabled and dying people. Advocacy for patients and their significant others, promotion of a safe environment inside and outside health care facilities, research, participation in shaping health policy, inpatient and health systems management, and education are also key nursing roles (International Council of Nurses, 2007). In such a situation, the nurses' role therefore, includes many work responsibilities and decisions for patient care. Unfamiliar tasks could present themselves and the nurse will need to seek information to complete the task.

Nurses are charged with the care and management of human lives, and therefore, there is no margin for mistakes or errors. An information question is considered serious because it can affect health outcomes. The use of research information by nurses in practice can facilitate innovation that may lead to better client health outcomes, validate existing nursing knowledge, procedures or interventions and challenge nurses to critically examine traditional practices, procedures and also question those that are not substantiated by research or other evidence. Research utilisation also

enhances professional self-concept, ensures provision of safe and effective care and enhances nurses' self-confidence. To the health care agency, it helps in provision of cost effective care, high quality care and professional satisfaction and motivated nursing staff. Furthermore, research utilisation adds value on the nursing profession itself by enhancing nursing autonomy, strengthening professional status, positive professional image and broadens the field of nursing scientific knowledge base (Gills and Jackson, 2009).

The General Nursing Council of Zambia (GNC) which is a statutory body responsible for regulating nursing and midwifery education, training and practice in Zambia acknowledges the importance of Evidence Based Information (EBI) and has decided to introduce Continuing Professional Development (CPD) for nurses and midwives in Zambia with a view to ensuring that they have the necessary competencies to provide quality health care to clients and communities. Continuing professional development of health professionals (particularly nurses) is a key element of the quality and efficiency of a health care system. The CPD process ensures that nurses and midwives update their knowledge and skills to use in clinical practice (General Nursing Council, 2014). This can only be attained through lifelong learning and; without access to timely and relevant research information this goal may be difficult to attain.

### **Study Context**

The University Teaching Hospital (UTH) formerly known as Lusaka hospital is the biggest public tertiary hospital in Zambia. UTH is in the capital city of Lusaka, approximately 4km east of the city centre. It was built in 1910; and in the colonial period was only meant for sick Africans who were only cared for by male orderlies as the hospital had no doctors and nurses. With the decision to move the capital city of Zambia from Livingstone to a much more central Lusaka, plans for a bigger hospital to cater for the increasing number of patients were prepared; therefore a new hospital was started at present day UTH site in 1939 and became a training hospital in the same year. In 1974, UTH experienced major expansions in most clinical disciplines and has continued expanding to its current status. Moreover, there has been a rapid population increase in Lusaka city of more than 2,000,000 (Central Statistical Office (CSO) [Zambia], Ministry of Health (MOH) [Zambia], and ICF International, 2014). UTH attends to over 70,000 patients per quarter with 20,000 admissions. Further, approximately 5,000 babies are born in the same period. The hospital has a very high disease burden and a lot of complicated cases, health challenges and therefore, this makes it more appropriate as the study site because most information needs for Evidence Based Practice (EBP) may be required by nurses and other professionals in such an environment. This is confirmed by the overall occupancy rate of 82%, reflective of a high disease burden (UTH, 2015). The hospital has approximately 1,655 beds and 250 baby cots; it provides a full range of primary, secondary and tertiary health and medical services on both out patients and inpatients.

The vision of UTH is “to be the centre of excellence for health care in the country and region by providing innovative treatment interventions through ongoing research”, while the mission statement is “to provide affordable quality health care; function as a referral centre, train health care providers; conduct research to find solutions to existing problems and for the development of science” (UTH, 2015). In conformity with its mission statement, the hospital directs its efforts towards research, improving general medical services and functions as a tertiary health care institution. Over a period of time, the institution has built capacity in various areas of specialisation such as Cardiology; Cardiac surgery, Anti-Retroviral Therapy (ART), Ear Nose Throat (ENT),

Urology, Orthopaedics and Pulmonary medicine. UTH 's aims and objectives are centred on the provision of specialist and general health care to all citizens of the Republic of Zambia, to train health care personnel in medicine, nursing, physiotherapy, radiography and other paramedical disciplines, to conduct research thereby establish better management of commonly occurring diseases in Zambia and the Southern Africa region; and to act as a referral centre for all the country's medical needs where such needs cannot be cared for by peripheral medical institutions. The hospital has the following departments: Anaesthesia, Internal Medicine, Obstetrics and Gynaecology, Paediatrics, Surgery, Community Medicine, Pathology, Radiology, Blood Bank, Physiotherapy and Pharmacy.

### **Objectives**

The main objective of this study was to investigate nurses' use of research information in their clinical practice at the University Teaching Hospital (UTH) in Lusaka, Zambia. The specific objective was to investigate the extent to which research information is used in clinical practice by nurses.

### **Statement of the Problem**

Some institutions, organisations and libraries have developed extensive databases and services that are being used by health professionals, clinicians, and educators to access health information. Recognising the need for information, UTH through the UNZA School of Medicine, Medical Library and the UTH School of Nursing Library provides information to nurses and other professionals. Moreover, with the advancement of technology, the internet is one way which offers novel tools for providing information to health professionals. Despite all the growing availability of high quality research information and a strengthening focus on evidence based practice by policy makers the world over, nurses and other healthcare practitioners, have been slow to adopt research evidence into their daily decision-making (Buchan, 2004). Despite these global concerns and the professed benefits that come with the use of research information by nurses in clinical practice, the research output of the nursing profession in Zambia remains low and from the review of literature, it has been observed that, the use of research information by nurses in clinical practice in Zambia has not been reported or is not known. Due to this gap in knowledge, it is not known if nurses in Zambia utilise research information in clinical practice. It is against this background that this study explored the use of research information by nurses in clinical practice in Zambia, using the University Teaching Hospital (UTH) as a case study.

### **Methodology**

This was a case study that utilised both qualitative and quantitative methods of data collection. It was conducted in four units/wards namely; Medical Admission Ward, Maternity Admission Ward, Paediatric Admission Ward and Surgical Admission Ward. The main target population were practicing nurses at the University Teaching Hospital. The main instrument used to collect data was the questionnaire. Quantitative data was analysed using SPSS version 20 and qualitative data was analysed using themes of a purposive sample of 60 practicing nurses.

**Inclusion criteria:** The nurses who were currently working in the selected wards at the time of data collection and those who had worked at UTH for at least one (1) year were included in the study.

**Exclusion criteria:** Those nurses who were absent from work due to reasons such as being on leave during the time of data collection were excluded. Nurses who had worked less than one year at UTH and trainee nurses were also excluded.

### **Delimitations of the study**

This is a case study limited to the University Teaching Hospital Medical Admission Ward, Maternity Admission Ward, Paediatric Admission Ward and Surgical Admission Ward only. Therefore the findings might not be applicable to other hospitals. However, the interest of the study was to understand the depth and in detail, the context of the case of nurses' use of research information in clinical practice at the University Teaching Hospital.

### **Findings of the Study**

#### **Response rate**

Out of the total number of 60 questionnaires sent out, 57 were returned from the respondents, representing a response rate of 95%. The good response rate could be attributed to constant follow ups by the researcher. The questionnaires were distributed to UTH nurses in the following wards and the response was as follows; in Medical Admission (10; 18%), Surgical Admission (15; 26%), Maternity Admission (15; 26%) and Paediatric Admission (17; 30%) wards. The majority of respondents came from the Paediatric Admission Ward while the least came from Medical Admission Ward.

#### **Characteristics of the respondents**

This section covers general information on characteristics of respondents such as gender, age qualifications, experience, position, unit/ward and roles. Of the 57 respondents, 13 (22.8 %) were male, while 44 (77.2 %) were female. This data shows that the majority of nurses under investigation were female as shown in Table 1. Furthermore, regarding age distribution of the respondents.

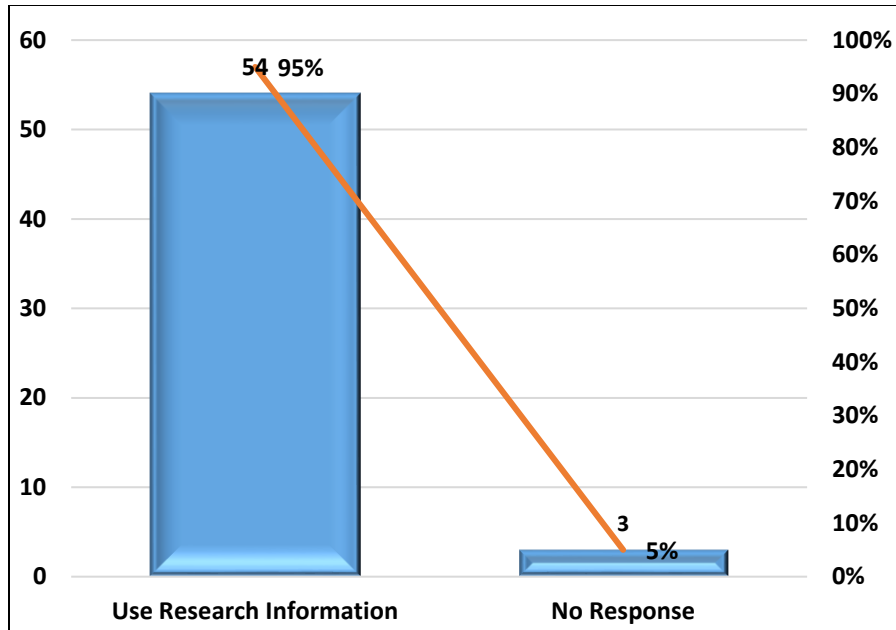
Table 1 reveals that out of the total number of respondents 15 (26.3 %) were aged between 20-25 years, while 31(54.4%) were aged between 26-35 years and 11 (19.3 %) were aged above 35. This demonstrates that, most of the nurses under investigation were aged between 26-35years.

In terms of nursing experience, 26 (45.6%) had worked for 2-4 years; 19 (33.3 %) had worked for 5-9 years while 12 (21.1%) comprised of those nurses who had worked above 9 years. The data further indicates that the majority of nurses had only 2-4 years nursing experience. Considering the nurses' qualifications; only 2 (3.5%) had nursing degrees while 23 (40.4%) were Registered nurses, 15 (26.3%) were Enrolled nurses and 17 (29.8%) were Midwives. Most of the respondents 44 (77%) indicated that they took care of at least 20-60 patients per shift. See Table 1.

<b>Table 1: Background characteristics of respondents</b>			
Variable	Values	Frequency (n=57)	%
Gender	Male	13	22.8
	Female	44	77.2
<b>Total</b>		<b>57</b>	<b>100</b>
Age	20-25yrs	15	26.3
	26-35yrs	31	54.4
	above 35yrs	11	19.3
<b>Total</b>		<b>57</b>	<b>100</b>
Work experience	2-4yrs	26	45.6
	5-9yrs	19	33.3
	above 9yrs	12	21.1
<b>Total</b>		<b>57</b>	<b>100</b>
Professional qualifications	Zambia Enrolled Nurse	15	26.3
	Zambia Registered Nurse	23	40.4
	Zambia Enrolled Midwife	8	14.0
	Zambia Registered Nurse Midwife	9	15.8
	Bachelor of Science Nurse	2	3.5
<b>Total</b>		<b>57</b>	<b>100</b>

### **Extent to which nurses use research information in clinical practice**

This section provides findings of the study on the extent to which nurses used research information in clinical practice. To find out the extent to which nurses used information in clinical practice, respondents were asked if at all they used research information in clinical practice; and the results show that 54 (95%) indicated that they used research information in clinical practice. A total of 3 (5%) did not indicate the extent to which they used research information in their practice. See Fig. 2.

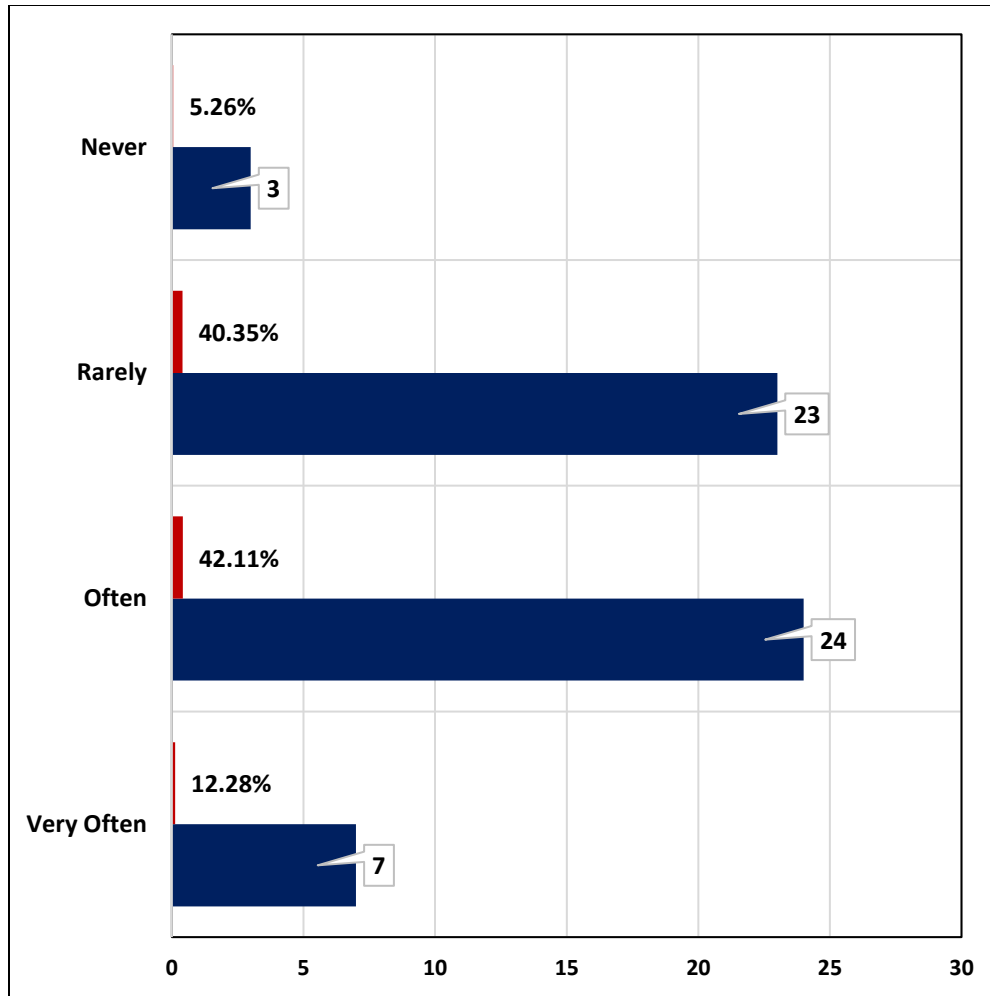


**Fig.2. Use Research Information in Clinical Practice by Nurses**

**Frequency of Use of Research Information in Clinical Practice**

Respondents were further asked to state the frequency of use of research information in clinical practice; results were that only 7 (12.28%) used research information frequently i.e. very often; whilst 24 (42.11%) used research information often times. The rest of the respondents either rarely 23 (40.35%) or never 3 (5.26%) used research information in their nursing practice. This result demonstrates that the majority of nurses (Very Often, 12.28 and Often, 42.11 = (31, 54.39%) did use research information in clinical practice frequently (Fig. 3).





**Fig. 3. Frequency of Use of Research Information**

### **Relationship between Work Experience, Role, Professional Qualifications and Nurses' Use of Research Information in Clinical practice**

Further analyses were conducted to establish whether work role, work experience and professional qualifications had an association regarding nurses' use of research information in clinical practice. Fishers' Exact test was used to answer this question, at a significance level of 0.05. The results were not significant in all the three situations. That is nurses' use of research information in their clinical practice was not associated with work experience ( $\chi^2= 4.474$ ;  $df=4$ ;  $p>0.05$ ), professional qualification ( $\chi^2= 9.019$ ;  $df=8$ ;  $p>0.05$ ), and work role ( $\chi^2= 8.903$ ;  $df=6$ ;  $p>0.05$ ).

### **Discussion of the Research Findings**

#### **Nurses Use Research Information in Clinical Practice**

The findings revealed that (95%) of the nurses used research information in clinical practice and (5%) did not indicate whether they used research information in their clinical practice as they did not respond. The results show that indeed a significant number of the nurses (95%) did use research information in their clinical practice. In Kenya, a study by Mutisya et al. (2015) found that 20.6% of the nurses were participating in research related to their work and of those 53.6% were

implementing research findings into practice which they felt led to improvements in practice or solved an existing problem”. The same situation exists in Nigeria where in a study of nurses, the “majority of the study respondents 74 (61.7%) agreed that they had utilised research findings in their practice, while 38 (31.7%) confessed they did not and 8 (6.6%) were not sure if they had utilised research findings before (Asuquo, 2013). In Nigeria again, 91.0% of the nurses perceived research as very important in promoting quality health care (Adejumo and Guobadia, 2013). It can therefore be reasonably argued and acknowledged that “use of research information has been considered the gold standard in the provision of quality patient care” (Brown et al., 2009); as it “increases the probability of desired health outcomes for patients” (IOM, 2013).

### **Frequency of Use of Research Information in Clinical Practice**

A further analysis was conducted to find out the frequency of use of research information in clinical practice. The study established that over half (54.39%) of the respondents used research information frequently (i.e. Very Often and Often) in their clinical practice. This result seems to suggest that more than half of the nurses used research information in clinical practice. The results also seem to agree with various scholars whose studies indicate that there is enough evidence to suggest that nurses do indeed use research information in clinical practice although the degree of usage varies. In a systematic review study by Squires et al. (2011) on the “extent of research use in general by year of publication (N = 36 articles) using three studies (Butler, 1995; Linde, 1989; and Pettingill, 1994); the study suggests that “research use in general was found to range from low through to high use. A peak in the number of articles reporting general research use occurred in 1995 to 1999, and reports of high general research use starting in 2005” (Squires et al. 2011).

Additionally, in another systematic review of the extent of nurses’ research utilisation in clinical practice; nurses reported their research utilisation to an extent designated as moderate-high in the majority of the included studies Kajermo et al. (2010). According to Godlee et al. (2004) and Gathoni (2012) information is a prerequisite to the development of any nation and is a driving force for development, whether economic, social, or political. Information is also an indispensable contributor to good health outcomes, and a critical element of well-functioning health systems (Gathoni, 2012). McCaughan et al. (2005) argue that nurses do not routinely seek answers from research when faced with clinical uncertainty, even though the decisions they make could be improved using evidence from valid, relevant research whilst online and text based sources of information are not used during their consultations with patients, except in the context of drug related enquiry.

Mehrdad (2007) results revealed a low extent of research utilisation due to organisational barriers and limitations. It is important to note that, for information to be used, it must be available, accessible, and usable, and absorbed by the recipients of the information (Wagacha, 2007). Research utilisation in nursing practice is a mechanism to help improve the existing practices and the quality of health care. Nursing as an academic discipline is concerned with knowledge generation and utilisation to serve clients. Research utilisation in nursing practice is not only a duty but also a professional responsibility. Nurses’ research utilisation (RU) as part of evidence-based practice is strongly emphasised in today’s nursing education and clinical practice. While research output has increased, clinical nurses make limited use of the findings to improve patients care (Mehrdad, 2007). Similarly, Mehrdad (2007) says that a study conducted in Tehran to investigate the extent of research utilisation by nurses in clinical practice results indicated a low

extent of research utilisation due to organisational barriers and limitations, research quality, nurses' limited awareness and skills, poor communication of research findings, and a lack of time and facilities. Results also indicated that utilisation of the research findings is a complicated organisational process rather than an individual process. It is argued that leadership and management, organisational culture, education, resources and facilities are important factors in research utilisation in nursing practice.

On the other hand a review of literature on studies of nurses' use of printed materials show differences in awareness of research and availability of information resources, both of which are often limited in small hospitals and primary care settings. In a study by Royle and Blythe (1998) they found that, compared with small hospitals, bigger hospitals were more likely to have nursing research coordinators, access to nursing research experts and nursing faculty, nursing research committees and libraries with nursing research journals. They also established that these bigger hospitals were more likely also to implement research utilisation programmes for their staff nurses. Furthermore, nurses read clinical or technical journals rather than research journals and rarely visited libraries. Nurses also engaged in education or research and used these resources as well as indexes and computerised databases such as Cumulative Index to Nursing and Allied Health Literature (CINAHL) and PubMed/Medline. Nurses were also willing to use these resources for clinical decision making and patient teaching when the information is relevant and the system was user friendly. Novice users accessed online information during night shifts or quiet times. More expert users accessed information on all shifts, but used patient specific, quick references during the day. Little is known however, about nurses' use of the Internet, including whether they use it to answer clinical questions at home, in practice, or both (Royle and Blythe, 1998).

Another study was conducted by Agbedia et al. (2013) in Nigeria to explore the views of Nigerian nurses on research-practice gap in clinical practice and the challenges faced in the utilisation of nursing research. The results from in-depth interviews and focus group discussions demonstrated that a research practice gap existed in the clinical setting. Nurses generally did not utilise research findings in their practice. The reason could be that, they mostly based their evidence for practice on knowledge they acquired from nursing schools, as discovered by Mutisya et al. (2015) in their study where they sought to investigate research utilisation among nurses at a Teaching Hospital in Kenya. In the study, it was established that the majority of nurses relied on knowledge acquired during nursing training. In the same study by Mutisya et al. (2015), it was also discovered that only a minority of nurses participated in research work and used research findings in practice.

Fishers' exact test was conducted to establish if there was an association between work role, work experience and professional qualifications. The study established that nurses' use of research information in clinical practice was not associated with work roles, experience and professional qualifications. Meaning that work experience, professional qualification and work role did not have any significant effect on the use of research information in clinical practice at UTH. This refutes the assertion by Spencely et al. (2008) that nurse characteristics such as experience can impact how information is sought to complete patient task as this was not the case with UTH nurses.

## **Conclusion**

The importance of using research information by nurses in clinical practice has been clearly articulated by the researchers. The study has shown that the number of nurses that admitted that they were making use of research information frequently in clinical practice at the University Teaching Hospital was above 50%. This is therefore a clear indication that use of research information is appreciated at the biggest referral hospital like the University Teaching Hospital in Zambia. It is also important that studies that relate nurse's information needs to use in clinical practice for various tasks such as patient care, infection prevention control, and new remedies; and how to administer drugs amongst others are conducted in African countries.

### **Relevance to Policy formulation and Practice**

The research identifies several policy implications that are relevant to practice such as:

1. Assist policy makers come up with the best ways of providing Evidence Based Information to practicing nurses in Zambia.
2. Help nurses, nurse educators and nurses associations understand the importance of research information utilisation in clinical practice.
3. Improving research utilisation may provide nurses with the golden opportunity to meet the patients' caring demands with the appropriate positive responses.
4. Assist in directing efforts towards training nurses in problem-solving and information-seeking.

### **Recommendations**

In light of the findings obtained from the study, the following recommendations are made:

1. University Teaching Hospital Management should improve Information and Communication Technology (ICT) infrastructure so as to facilitate access to better Evidence Based Information (EBI)
2. Run sensitisation training and workshops on research utilisation in practice, as this can help the nurses to appreciate the importance of research use in clinical practice. Nursing staff also require training in electronic information retrieval skills as well as computer skills.
3. Library management at the University of Zambia Medical Library and University Teaching Hospital School of Nursing Library and other information provision providers should increase promotion/marketing of information resources to practicing nurses in order to improve awareness which can lead to increased access to information resources. The information should be tailored in a way that meets the specific information needs of nurses for easy access at the point of care
4. Further study should be conducted which looks at the role that the University of Zambia Medical Library plays in the provision of health information to practicing nurses at the University Teaching Hospital.

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