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Research Utilization among Nurses at a Teaching Hospital in Kenya

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ABSTRACT

Introduction: In the era of evidence based practice (EBP), health care delivery should be grounded on new or validated knowledge and evidence from research. The aim of the study was to assess research utilization by nurses and the influencing factors at Kenyatta National Hospital (KNH), the largest teaching hospital in Kenya.

Methods: The study employed a descriptive design that utilized both quantitative and qualitative methods of data collection. It incorporated the Barriers to Research Utilization Scale. It was conducted in six specialized care areas at KNH. Data was collected using questionnaires, Focus Group Discussion and in-depth interviews. Data was analyzed using SPSS version 13 and qualitative data analyzed using themes.

Results: The study found that 20.6% of the nurses were participating in research related to their work and 53.6% of these were implementing research findings to practice. Over $\frac{2}{3}$ (70.5%) of the respondents were basing their evidence for practice on the knowledge gained during their nursing school. The three greatest barriers to research utilization were that research reports are not readily available (68.7%), unclear implications for practice (66.5%) and inadequate facilities for implementation (66.4%).

Conclusion: It is recommended that sensitization trainings on nursing research/utilization of findings in nursing practice be established to create awareness, motivate and enhance nurses' abilities and also facilities should be provided to enable implementation.

Introduction

The current health care practices require evidence in order to justify actions. Knowledge gained from undertaking nursing research is used to provide evidence besides leading to improvement in the quality of care. Nurses need to devise ways of making nursing interventions cost-effective. Evidence Based Practice (EBP), which is the deliberate use of available evidence when making decisions about the care of individual patients, has proved very useful in nursing practice. It combines information about research results, clinical expertise, patient concerns and patient preferences.¹

Regulatory authorities and many health care institutions have realized EBP as the best

way to the provision of quality, cost-effective, safe and compassionate health care.²

In order to meet the changing needs of both consumers and providers of health care, nurses need to shift from traditional practices to evidence-driven health care services.³ The International Council of Nurses has been in the forefront in supporting use of research findings by nurses to inform evidence-based practice.⁴

Studies done in United Kingdom, United States of America and other developed countries have found mixed results about nurses' utilization of research findings in practice. However, great advances have been made in these countries. In Sweden, nurses are required to perform care based on

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research findings and best experiences.⁵ Many health care institutions in different countries have adopted evidence-based practice and developed initiatives to advance provision of health care based on best evidence rather than on tradition.² Several studies have been done that utilized the Barriers Scale and investigating nurses' utilization of research results in nursing practice. Some of the identified determinants include beliefs and attitudes, involvement in research activities, information seeking, professional characteristics, education and other socioeconomic factors.¹

Participatory management, an academic degree, education, availability of relevant research, time, positive attitudes and mentorship have also been shown to have a positive relationship with nurses' likelihood to undertake and use research in practice.^{6, 7, 8} Literature shows gaps in knowledge, conduct of nursing research and use of research findings to improve patient care practices. Varied reasons are cited for non-utilization of research findings in practice.¹

Some of the reported barriers to research utilization in the studies that have utilized the barriers scale include lack of resources, time, inadequate authority to change practice, results not being generalizable to own setting and unavailability of research findings.⁹⁻¹¹

Despite the emphasis and benefits associated with nursing research and EBP, few nurses utilize research findings to inform nursing practice and especially in developing countries. This is especially important in specialized care units owing to the special nature of the care provided which needs to be based on evidence. Use of research in practice remains poor.¹² Little is known about the basis of evidence for nursing practice.

According to WHO,¹³ most research activities in Africa are linked to educational or academic programmers and it is not known how much nursing research is being utilized to improve nursing practice in order

to ensure high quality of health care delivery to improve standards and quality of life.

Studies recommend assessment of research utilization and the influencing factors so that barriers can be effectively addressed and the concepts incorporated into practice. In Kenya, utilization of research in nursing practice has not been studied despite its prescription in the scope of practice for nurses by Nursing Council of Kenya.¹⁴ There is knowledge gap as to why this is happening despite the advancement in nursing education. Without utilizing nursing research findings, nursing knowledge will stagnate. Modalities to improve standards of nursing practice in Kenya need to be identified and especially in the largest teaching hospital. The study therefore set to assess research utilization and the influencing factors at this teaching hospital in Kenya so as to devise measures of strengthening and enhancing evidence based nursing practice.

Materials and methods

The study employed a descriptive design and utilized mixed methods of data collection. The study utilized the Barriers' Scale to identify barriers to research utilization.

These included six specialized care units: Intensive care unit, Burns unit, Renal unit, Cardiology unit, Operating Theatres and Emergency Department at Kenyatta National Hospital which is the largest referral and teaching hospital in Kenya. Many nurses undergo their training in this institution after which they are deployed to other parts of the country where they replicate their knowledge and skills.

This involved all nurses working as clinicians, administrator's oras clinical instructors or tutors with an experience of at least one year post nursing school training.

The hospital has 1600 nurses in total with 340 deployed to the specialized care units. The formula by Fischer's et al., was used to arrive at a sample of 180 nurses. Simple random sampling method was used to obtain

the proportionate sample from each specialized care unit (ICU-56; Burns unit-16; Renal unit-16; Cardiology unit-5; Operating room-42; Emergency department - 48)

The included all nurses whether male or female working in either of the specialized care units with a minimum nursing experience of at least one year. Those on leave during the time of study were excluded.

The main tool of data collection was a self-administered questionnaire. The questionnaire sought information on nurses' demographic characteristics and their use of research findings in practice. It incorporated the 29-item Barriers Scale.¹⁵ Participants completed the questionnaire at work. A Focus Group Discussion and in-depth interviews were also carried out to obtain qualitative data.

The completed questionnaires were examined daily for completeness and properly completed questionnaires were entered into computer and analyzed using SPSS version 13. Frequencies were obtained for nurses' demographic characteristics, use of research in practice and Barriers Scale ratings. The strength of relationships between variables was determined using bivariate correlations. Results were then presented in form of tables, figures and narrative.

Approval was sought from the Ethics and Research Committee of KNH and University of Nairobi and a clearance permit obtained from the National Commission for Science, Technology and Innovation. Permission to use the barriers scale was obtained from Sandra G. Funk by submitting a signed form that is available online. Permission was obtained from KNH Research and Programs Department. Participation was voluntary and a written consent was obtained from each participant. The questionnaires were serialized and the respondents were not required to write their names or any other identification numbers. Information provided was treated with utmost confidentiality and

this was communicated to all the respondents.

Results

In total, 183 nurses from the specialized care units were involved in filling the questionnaires. All of them returned the questionnaires representing a 100% response rate. However, 6 questionnaires were incompletely filled.

Table 1 (Part A and B) shows the participants' characteristics. Females were more (74%) than males (26%). The mean age was 39 years (range 28 - 57 years). Majority (40%, 73) was in the age bracket of 32-43 years. Seventy four percent of the respondents were Kenya Registered Community Health Nurses. Most (30.6%, 56) of the respondents came from ICU, with 25.7%, (47) from Accident & Emergency department and 21.9%, (40) from Operating theatres. More than half (64.5%, 118) had a nursing experience of between 10 and 20 years. Over three quarters (76.5%, 140) were either nursing officer 1 or senior nursing officers.

Only 37 (20.6%) indicated having done a research other than the one they did at nursing school while 20.8% were participating in research related to their work (Table 2). More than half (53.6%) of those respondents participating in research related to their work indicated implementing research findings to practice. Forty percent of these researches were local surveys and their application led to improvements in practice or solved an existing problem. A minority (11.9%) read journals weekly or fortnightly while a majority (67.8%) took more than a month to read one. Twenty percent rarely or never read journals at all.

The main reasons given for not implementing research findings in practice were that no researches done and /or no feedback are given after doing research. More than three quarters (77%) appreciated that researches add value to practice.

Asked to indicate their basis of evidence for nursing practice, 70.7% cited knowledge gained during nursing school training while 65.2% relied on experience gained at the work place. About a quarter or less were relying on knowledge from either doing

research or reading research findings from journals (Figure 1). Accessibility to journals or journal articles was indicated as a major barrier to using findings in practice owing to low or no subscription (70%, 128).

Table 1. (Part A) Demographic characteristics of the respondents (n=183)

Variable	N (%)
Age (years)	
Median (min, max)	37 (28, 57)
Mean (SD)	39 (8.4)
Sex	
Female	135 (74)
Nursing qualification	
Enrolled nurse	18 (10)
Kenya registered nurse/midwife	6 (3.3)
Kenya Registered Community Health Nurse	136(75.6)
Bachelor of science nurse	17 (9.4)
Master of science in nursing	3 (1.7)
Nursing experience (years)	
2-4	6 (3.3)
5-9	31 (16.9)
10-15	83 (45.4)
16-20	35 (19.1)
21-25	18 (9.8)
Over 25	10 (5.5)
Position	
Senior nursing officer	9 (4.9)
Nursing officer 1	131 (71.6)
Nursing officer 2	24 (13.1)
Nursing officer 3	19 (10.4)

Table 1. (Part B) Demographic characteristics cont

Variable	N (%)
Major role	
Direct patient care	158 (86.3)
Administration/nursing policy	57 (31.1)
Implementation	
Clinical instruction/teaching	20 (10.9)
Infection control	27 (14.8)
Health promotion	30 (16.4)
Research	8 (4.4)
Work station	
Intensive care unit	56 (30.6)
Accident and emergency	47 (25.7)
Renal unit	18 (9.8)
Burns unit	17 (9.3)
Cardiac unit	5 (2.7)
Operating theatres	40 (21.9)
Other courses done	
Specialized 1 yr course	53 (29.5)
Short courses	69 (37.7)
None	60 (32.8)

Table 2. Research activities and utilization

Variable	Frequency	%
Done research		
Yes	37	20.6
No	143	79.4
Total	180	
Frequency of participating in research related to your work		
Very often	6	3.3
Often	32	17.5
Rarely	116	63.4
Not at all	27	14.8
Total	181	
Frequency of reading journals		
>Monthly	120	67.8
Weekly & fortnightly	21	11.9
Rarely	15	8.4
Never	21	11.9
Total	177	
Implementing research findings at work place		
Yes	98	53.6
No	61	33.3
No response	24	13.1
Total	183	
Whether researches add value to practice		
Yes	141	77
No	20	10.9
No response	22	12
Total	183	

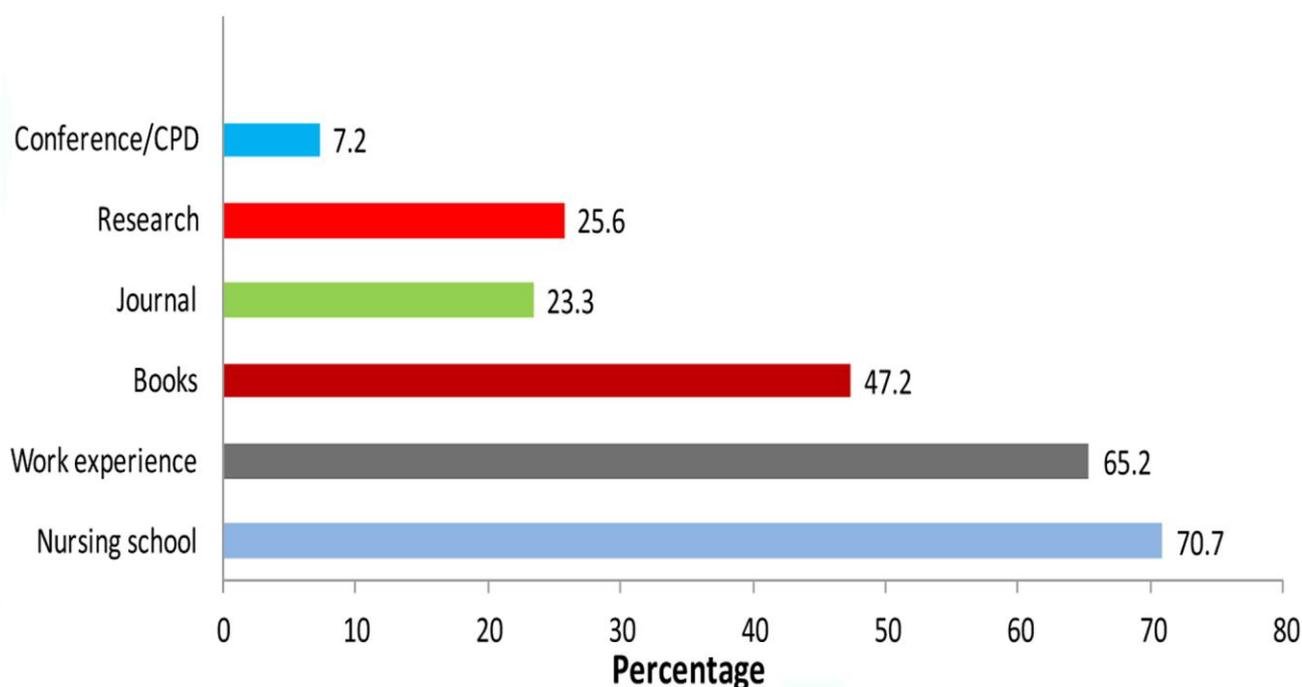


Figure1. Evidence basis for nursing practice

Professional qualification, having undertaken a post basic training or a short course and work station were shown to have a significant positive association with utilizing research findings in practice ($P < 0.05$). Also, being in an administrative position or clinical instruction role showed significant positive association with research utilization. However, sex, years of nursing experience, position held and even the level of research knowledge had no significant association with utilizing research findings in practice.

The greatest barriers to research utilization

according to the ratings in the Barriers Scale were those related to accessibility and communication/presentation of the research 2.84 (1.05) with three of the top six barriers falling in this category (Table 3). The major barrier cited was unavailability of research reports (68.7%), followed by implications for practice not being clear (66.5%) and facilities being inadequate for implementation (66.4%). Characteristics of the organization featured prominently encompassing lack of time, support, authority to change practice and generalizability of results 2.99 (1.19).

Table 3. Barriers to Research Utilization Scale Ratings (Adapted from Sandra Funk et al, 1991; Scale: 1-no extent 2-little extent 3-moderate extent 4-great extent)

Barriers scale items	N	N (%) [*]	Mean (SD)	Overall item rank
Factor 1: Characteristics of the adopter (The nurse's research values, skills, awareness)			2.70	
The nurse is unwilling to change/try new ideas.	177	99 (56)	2.81 (1.17)	11
The nurse is unaware of the research.	179	97 (54.2)	2.86 (1.24)	13
The nurse feels the benefits of changing practice will be minimal.	175	95 (54.3)	2.74 (1.20)	12
The nurse sees little benefit for self.	178	93 (52.3)	2.76 (1.25)	15
The nurse does not feel capable of evaluating the quality of the research.	176	86 (48.9)	2.73 (1.24)	18
The nurse is isolated from knowledgeable colleagues with whom to discuss the research.	176	83 (47.2)	2.65 (1.25)	20
There is not a documented need to change practice.	177	77 (43.5)	2.71 (1.30)	23
The nurse does not see the value of research for practice.	177	64 (36.1)	2.35 (1.21)	27
Factor 2: Characteristics of the organization (Setting, barriers, limitations)			2.99 (1.19)	
The facilities are inadequate for implementation.	176	117 (66.4)	3.23 (1.11)	3
The nurse does not feel she/he has enough authority to change patient care procedures.	174	113 (65)	3.09 (1.20)	4
The nurse feels results are not generalizable to own setting.	177	108 (61)	2.93 (1.09)	7
The nurse does not have time to read research.	177	105 (59.3)	2.93 (1.13)	8
Other staffs are not supportive of implementation.	176	102 (58)	3.01 (1.20)	9
Physicians will not cooperate with implementation.	176	99 (56.3)	3.18 (1.27)	10
There is insufficient time on the job to implement new ideas.	175	94 (53.7)	2.91 (1.25)	14
Administration will not allow implementation.	174	80 (46)	2.67 (1.28)	22
Factor 3: Characteristics of the innovation (Qualities of the research)			2.80	
Research reports/articles are not published fast enough.	176	112 (63.7)	3.17 (1.17)	5
The research has not been replicated.	176	89 (50.6)	2.95 (1.28)	17
The research has methodological inadequacies	178	85 (47.8)	2.82 (1.25)	19
The nurse is uncertain whether to believe the results of the research.	177	81 (45.8)	2.63 (1.22)	21
The literature reports conflicting results.	177	74 (41.8)	2.72 (1.35)	24
The conclusions drawn from the research are not justified.	176	67 (38)	2.53 (1.26)	26
Factor 4: Characteristics of the communication (Presentation and accessibility of the research)			2.84 (1.05)	
Research reports/articles are not readily available.	179	123 (68.7)	3.21 (1.06)	1
Implications for practice are not made clear.	179	119 (66.5)	3.23 (1.08)	2
Statistical analyses are not understandable.	179	112 (62.5)	3.08 (1.12)	6
The amount of research information is overwhelming	176	90 (51.1)	2.78 (1.23)	16
The relevant literature is not compiled in one place.	176	86 (48.9)	2.85 (1.27)	18
The research is not reported clearly and readably.	178	71 (39.9)	2.51 (1.28)	25
The research is not relevant to the nurse's practice.	176	47 (26.7)	2.20 (1.34)	28

^{*}Reporting item as moderate/great barrier

Respondents in the in-depth interviews mentioned inconsistent knowledge/skills of research and information search and indicated the need for creating awareness among the nurses. Lack of mentorship and motivation also emerged as major setbacks. Participant No 7: "Nurses need to be informed or updated with knowledge to know how to start off and also made aware of research opportunities." Participant No 13: "Nurses lack training in research." Participant No 9: "Nurses need extra training." Participant No 1: "Give nurses knowledge /Trainings showing them it is not difficult. Simplify it for them. Let them know they can do it."

Carrying out research/utilizing findings is not emphasized in the work place. It is not considered as part of the job description. Participant No 13 and 14: "There is no support for nurses to do research. Participants No 3 and 4: "There is lack of team approach. Nurses generally don't have interest to do things together.

There is lack of support from fellow nurses." Following feedback given to the management of this hospital after this survey, a program has already been started in the institution to support research by availing research funds and training researchers.

Nurses showed a lot of enthusiasm to base their practice on research findings. However, few nurses were motivated to do research. Also, there are no mentors in nursing research. Participant No 14: "There is no mentoring for nurses who wish to do research." Nurses are overwhelmed by the much work that they have to do owing to shortage of staff. Time factor was identified by almost all the participants in the in-depth interviews. Participant No 7 and No 10: "The kind of work is demanding. There is no time as you are fatigued at end of the day."

All respondents appreciated the importance of utilizing research findings in practice and especially for evidence based

practice which lead to improvement in the care of patients and provision of rationales for nursing care interventions. Almost all participants (n =12) indicated the need for appropriate mentoring and an organized approach in creating a research culture among the nurses.

Discussion

The study found that, 20.6% of the respondents had done a research other than the one they did at nursing school and 20.8% were participating in research related to their work. About half (53.6%) of these had implemented research findings in practice and this led to improvements in practice or solved an existing problem. This concurs with the emphasis by Mehrdad and Salsali,¹⁶ that utilizing research results in practice translates into efficiency, effectiveness and quality improvement in health care.

Over 70% of the respondents were basing their evidence for practice on knowledge gained during nursing school training while 65.2% relied on experience gained at the work place. While useful experiences are good for replication, this may sometimes lead to practices steeped in tradition which may not be useful to recipients of care. About a quarter or less were basing their evidence for practice on their own research findings or reading journal articles. It is apparent that if nurses do not use research findings in practice, then the benefits associated with it will be denied to the clients seeking health services.

The results show the greatest barriers to research utilization were related to the accessibility and availability of research results, unclear implications for practice and inadequate facilities. In fact respondents cited that few nurses engage in research and the findings of those few are not made available. The results are in agreement with previously published researches regarding utilization of research

findings by nurses and factors that act as barriers. Yaya *et al.*,⁹ found the most important barriers in Turkey as inadequate authority, lack of time and insufficient facilities. Patiraki *et al.*,¹⁰ in Greece found the two key barriers were related to the availability of research findings while Carrion *et al.*,¹¹ in Spain reported barriers related to the applicability of research results to own settings besides characteristics of the organizations where nurses worked and characteristics of the nurses themselves.

In UK, Closs *et al.*,¹⁷ found time, facilities and cooperation from colleagues as the greatest areas of concern. In the same country, Garish and Lacey¹⁸ found engaging nurses in research or utilizing findings in practice an extremely difficult concept in the initial stages but these were gradually adopted. In China, Sing-Ling Tsai¹⁹ found low participation in research but nearly half of the nurses had utilized research to change practice in the preceding 3 years. The main barriers were lack of time and staff.

In this study, respondents showed significant understanding of the importance of research in nursing practice and especially for evidence based practice. Nurses also reported lack of adequate knowledge, time, mentorship, and administrative support as other barriers to their research activities. These findings are similar to those found by Mehrdad and Salsali,¹⁶ in Iran and by Kuupelomaki and Tuomi in Finland.²⁰ Majority (over 80%) of respondents indicated the need to be sensitized on and supported in research activities and utilization of research findings in practice.

Conclusion

The study established the proportion of nurses utilizing research findings in practice and the evidence that they based their practice on. It also identified various

barriers to utilization of research findings in practice. The findings from some of the researches done were utilized in practice and this led to improvements. The respondents showed great understanding of the importance of research in nursing practice and more so for evidence based practice. They expressed great interest to be facilitated to carry out research and/or use findings in practice. There was a significant positive association between utilizing research findings in practice and nursing qualification, post basic training and work station. However, nurses cited the major barriers to utilizing findings in practice as the unavailability of research reports, unclear implications for practice and inadequate facilities. Also, inconsistent knowledge or skills, lack of time, support, motivation and results that are not generalizable to local setting were other barriers cited. These need to be addressed and especially for nurses in developing countries where 84% of the world's population live and which account for 93% of the world wide burden of disease.¹⁹

There is need to design strategies to support nurses' involvement in research and utilization of research findings in practice so as to enhance evidence based practice in health care systems in Kenya. The significance of nursing research and utilization of findings in practice needs to be emphasized during nurses' training period and incorporated in nurses' induction programs. Sensitization trainings on nursing research or utilization of findings in nursing practice are established to create awareness, motivate and enhance nurses' abilities and improve practice.

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Ethical issues

None to be declared.

Conflict of interest

The authors declare no conflict of interest in this study.

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