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A Cross-sectional Study of Self-Perceived Educational Needs of Emergency Nurses in Two Tertiary Hospitals in Nairobi, Kenya

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A CROSS-SECTIONAL STUDY OF SELF-PERCEIVED EDUCATIONAL NEEDS OF EMERGENCY NURSES IN TWO TERTIARY HOSPITALS IN NAIROBI, KENYA

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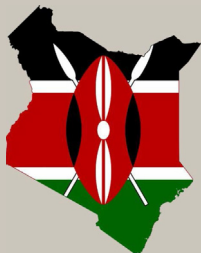
Section Editors: Pat Clutter, MEd, BSN, RN, CEN, FAEN, and Nancy Mannion, DNP, RN, CEN, FAEN

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BACKGROUND

Emergency nurses interact with injured and critically ill patients as first contact in health care settings. However, insufficient training has been shown to limit nurses from providing ideal emergency care in dealing with critically-ill patients.



METHODS

A descriptive cross-sectional study. Sample population; nurses working in emergency departments of two referral and teaching hospitals in Kenya (Aga Khan University Hospital, Nairobi and Kenyatta National Hospital) hospitals in Nairobi, Kenya. (n=84).

RESULTS

Majority of respondents (84.5%) perceived themselves as being highly competent in basic competencies.

Less than half of the respondents (48.8%) perceived themselves as being highly competent in intermediate skills.

Only 16.7% perceived themselves as being highly competent in advanced competencies.

CONCLUSION

THE RESULTS OF THIS STUDY SUGGEST THERE IS A KNOWLEDGE GAP AND AN EDUCATIONAL NEED AMONG EMERGENCY NURSES IN NAIROBI KENYA. THIS COULD BE BEST ADDRESSED BY A DETAILED POST GRADUATE LEVEL TRAINING AND PROFESSIONAL DEVELOPMENT.

A CROSS-SECTIONAL STUDY OF SELF-PERCEIVED EDUCATIONAL NEEDS OF EMERGENCY NURSES IN TWO TERTIARY HOSPITALS IN NAIROBI, KENYA



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Abstract

Background: Many low- and middle-income countries lack resources for well-functioning emergency care systems. Emergency nurses interact with injured and critically ill patients as the first contact in many health care settings. However, insufficient training limits nurses from providing ideal emergency care. The purpose of this research was to highlight educational needs specific to nurses working in 2 emergency departments in Nairobi, Kenya.

Methods: A descriptive cross-sectional study involving emergency units of 2 of the largest referral and teaching hospitals (Aga Khan University Hospital, Nairobi, and Kenyatta National Hospital) in Nairobi, Kenya, was conducted. Data were collected by using an adapted structured, self-administered questionnaire. The data were analyzed using descriptive statistics. The skills and competencies of the participants were assessed. In addition, the educational gaps and needs of the participants around emergency care such as trauma, cardiovascular diseases, and respiratory and neurological illnesses were described. Results were presented in frequencies and percentages.

Results: The questionnaire response rate was 63.6% ($n = 84$). Most of the respondents held associate degrees in nursing

(72.6%), whereas 19% had a bachelor's degree in nursing. Most respondents (84.5%) perceived themselves as being highly competent in basic skills such as performing cardiopulmonary resuscitation and assessment of body systems. Less than half of the respondents (48.8%) perceived themselves as being highly competent in intermediate skills such as assisting with endotracheal intubation. In advanced competencies, such as analyzing electrocardiograms and administering thrombolytic medications, only 16.7% perceived themselves as highly competent.

Conclusion: The results of this study suggest there is a knowledge gap and educational needs among emergency nurses in Nairobi, Kenya. It identified injuries/trauma; cardiovascular, respiratory, and neurological disease; and other emergencies as topics of focus areas with a high need. To address these knowledge and skills needs, a future specialty training in emergency nursing is recommended and this could be achieved through continuing professional development and short courses or postgraduate-level training.

Key words: Emergency nursing; Emergency department; Emergency nursing services; Nursing education; Kenya

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Background

Emergency care remains one of the least developed aspects of health care in low- and middle-income countries (LMICs) because many of these countries lack coordinated systems and have limited resources.¹ If efficiency and organization of emergency care were improved in LMICs, more lives could undoubtedly be saved, despite emergency care's limitations in LMICs compared with high-income countries.² Even though communicable and maternal causes of death have decreased sharply globally as a proportion of total deaths in global disease burden, they still remain common causes in LMICs³ with approximately 90% of the injury burden occurring in LMICs.⁴

The need for emergency care improvements is particularly relevant in LMIC sub-Saharan Africa. In Kenya, the leading causes of mortality related to disease processes are communicable with HIV/AIDS, lower respiratory tract infections, and diarrheal diseases.³ Kenya, like other developing countries, has seen a rise in fatalities from injury throughout the past 40 years, which can be partially credited to the lack of a comprehensive emergency trauma care system.⁵ More specifically, Nairobi (the capital city) has seen a dramatic increase in building collapses in the recent past, adding to the overall burden of injuries.

Nurses make up the largest group of health care workers and form the backbone of health care delivery in Africa and are often the first health care professionals to manage a severely injured or critically ill patient.¹ Emergency nurses need an advanced skill set and in-depth clinical knowledge for effective management of their patients.⁶ The capability of emergency nurses to promptly identify signs and symptoms in patients who are acutely sick is critical to provide safe patient care. Globally there are no uniform guidelines that direct the level of education that is required to work in nursing roles in emergency departments.

Australia, Canada, New Zealand, the United Kingdom, and the United States have well-established emergency nursing competency standards and advanced practice roles, including emergency nurse practitioners who require graduate education for qualification, certification, or registration.⁷ Emergency nursing in Africa is progressing, but is confined by limited resources.⁸ Previous studies demonstrate inadequate basic emergency skills, course knowledge, and exposure to emergency departments in nursing undergraduate training programs in Africa.⁹ Formalized specialist emergency care is developing in many African countries such as Kenya, but many of these countries have not yet established emergency nursing as a nursing specialty.

Addressing these educational deficits through an African emergency nursing curriculum has been a challenge owing to a lack of resources, communications challenges and disruptions, low educational uptake, and a lack of monitoring and evaluation initiatives.⁸ Patients with various clinical presentations to the emergency department are evaluated by health care providers of different medical specialties but all of these patients will still interact with emergency nurses during their care. Therefore, emergency nurses need a higher-level skill set and in-depth knowledge to manage these patients' care effectively.

According to a study conducted in Dar es Salaam, Tanzania, nurses lacked knowledge and skills pertaining to patient's triage assessments in emergency departments.² This knowledge and skill gap is concerning because triage

in emergency departments is key for patient prioritization and may influence patient outcomes. A different study in South Africa found that only 2 of their sampled nurses ($n = 128$) working in the emergency department had formal training in emergency nursing. Almost half of these respondents (48%) had low self-perceived competency levels.⁶

Emergency nurses need advanced expertise and vast clinical knowledge to enable them to manage and provide effective patient care, which demonstrates a need for continuing educational advancement and ongoing professional development among Kenyan emergency nurses. This study aimed to describe self-perceived educational needs of nurses working in emergency departments in Nairobi, Kenya. Specific objectives entail (1) describing levels of perceived competencies among emergency nurses, (2) identifying the educational needs of nurses working in emergency units in Nairobi, Kenya, and (3) determining potential means of addressing these gaps.

Methods

DESIGN

This was a descriptive, cross-sectional study describing the self-perceived educational needs and competency levels among nurses working in emergency departments in Nairobi, Kenya. Data were collected in December of 2019.

SETTING

The setting of the study included the emergency units of 2 of the largest referral and teaching hospitals in Kenya. Of the 2 hospitals in Nairobi chosen to be part of this study, Aga Khan University Hospital, was privately funded, and Kenyatta National Hospital was state owned and funded. These 2 hospitals were selected because they have busy 24-hour emergency units with 200 to 250 daily patient visits and serve as major trauma and referral centers for Nairobi and Kenya as a country.

STUDY POPULATION

The target population were nurses working in the emergency departments of the 2 hospitals working in both adult and pediatric emergency departments. At the time of data collection, Aga Khan University Hospital employed 60 registered nurses and Kenyatta National Hospital employed 95 registered nurses in their emergency departments. All nurses are licensed by the Nursing Council of Kenya

(NCK) by means of a state board examination after nursing education training.

The inclusion criterion for the study was registered and enrolled nurses (enrolled nurses are nurses providing nursing care under the direction and supervision of a registered nurse and are licensed by the NCK; their roles are similar to licensed practical nurses in the US or nursing associates in the United Kingdom) in the emergency department of the 2 study sites who were directly involved in patient care. Those excluded were nurse managers, nurses not involved in direct patient care, and student nurses in the emergency departments.

SAMPLING

Convenience sampling was used to include all nurses who were available, directly involved in patients care and willing to participate.

DATA COLLECTION

The data collection tool was an adapted structured, self-administered questionnaire developed by Dulas and Brysiewics⁶ who also approved its use and adaptation. The validity of the tool has been assessed by specialists in emergency care in Ghana and the US.⁶

VARIABLES

Knowledge and skill competencies of emergency nurses can be defined in 3 stages: basic, intermediate, and advanced.¹⁰ Basic skills are the fundamental knowledge an emergency nurse should have, such as performing cardiopulmonary resuscitation (CPR) and assessment of body systems. Intermediate skills are gained with experience and higher levels of knowledge, such as assisting with endotracheal intubation. Advanced skills such as analyzing electrocardiograms and administering thrombolytic medications involve knowledge application and critical reasoning gained through experience and specialty level training.⁶ Competency levels were self-rated as least competent (1 score), competent (2 scores), and highly competent (3 scores). A higher score indicated higher self-perceived competence. The skills were categorized as basic, intermediate, and advanced skills.

Educational needs were rated in relation to 5 areas, namely trauma, cardiovascular, neurological, respiratory, and other emergency topics. The respondents were asked whether they agreed they had an educational need. Agreed scored 3 points, neither agree nor disagree scored 2 points,

TABLE 1
Number of participants per study site and their years of experience

Variable	Frequency (n = 84)	%
Site		
Study site 1	37	44
Study site 2	47	56
Years of experience		
0-11 mo	20	23.8
1-2 y	15	17.9
2-5 y	21	25.0
> 5 y	28	33.3

and disagree scored 1 point. Hence, the higher the score, the higher the educational needs.

PROCEDURES

Appointments were made with the nursing managers of the respective units to contact their nurses and observe all due institutional protocols. Data were collected by research assistants by directly distributing paper questionnaires to the nurses. All filled questionnaires were returned to the research assistant who then handed them over to the principal investigator and stored in a lockable cabinet. The questionnaires were stored in the lockable cabinet held by the principal investigator until they were entered into a password-protected and encrypted database.

ETHICAL CONSIDERATION

Permission and ethical approval to conduct the study were sought and granted by the Aga Khan University Ethics Committee, the research Committee of Kenyatta National Hospital/University of Nairobi, and National Commission for Science, Technology and Innovation. A written informed consent was obtained from each respondent prior to data collection.

DATA HANDLING AND ANALYSIS

Data were analyzed using the SPSS, version 20 (IBM SPSS Statistics). Descriptive statistical techniques were used to analyze the data, and the results were presented using frequencies and percentages. There were questions with incomplete responses that were missing at random. Missing

TABLE 2
Perceived competency levels (N = 84)

Basic skill	Highly competent		Competent		Least competent	
	n	%	n	%	n	%
Able to administer oxygen: cannula, mask, bag valve mask	77	91.7	7	8.3	0	0
Able to assess circulation: pulses, skin color, capillary refill, blood pressure, signs of bleeding	73	86.9	10	11.9	1	1.2
Able to assess breathing: rate, effort, cyanosis	68	81	16	19	0	0
Able to assess mental status: monitor Glasgow coma scale	66	78.6	17	20.2	1	1.2
Able to perform cardiopulmonary resuscitation	62	73.8	21	25	1	1.2
Intermediate skill	Highly competent		Competent		Least competent	
	n	%	n	%	n	%
Able to control hemorrhage: apply tourniquet, fracture splint, pelvic wrap	50	59.5	30	35.7	4	4.8
Able to manage shock: obtain intravenous/ intraosseous access and administer fluids	47	56.0	33	39.3	4	4.8
Able to prepare and assist with endotracheal intubation	47	56.0	30	35.7	7	8.3
Able to prepare and administer drugs in cardiac arrest	45	53.6	34	40.5	5	6
Able to prepare and administer thrombolytics	30	35.7	37	44	17	20
Able to administer local anesthetic and apply sutures	029	34.5	39	46.4	14	16.7

continued

TABLE 2
Continued

Intermediate skill	Highly competent		Competent		Least competent	
	n	%	n	%	n	%
Able to obtain and interpret electrocardiograms: detect arrhythmias eg, atrial fibrillation	29	34.5	36	42.9	19	22.6
Able to perform cardioversion/defibrillation	20	23.8	41	48.8	23	27.4

data were caused by nonresponse from the study participants and were excluded list-wise.

Results

DEMOGRAPHIC CHARACTERISTICS

At the time of data collection, study site 1 had 47 emergency nurses of whom 37 agreed to complete the questionnaires and study site 2 had 85 nurses of whom 47 participated in the study. The response rate was 63.6% (n = 84) as illustrated in Table 1.

Most respondents held associate degrees in nursing 72.6% (n = 61), whereas 19% (n = 16) had a bachelor's degree in nursing and 4.8% (n = 4) had a higher degree or specialized training in emergency nursing (a postregistration-level training). Only 2 of the respondents had a certificate in nursing, and 1 respondent had a master's degree in nursing.

COMPETENCY LEVELS

As noted in the methods, competency levels were self-rated as least competent, competent, and highly competent, and the skills were categorized as basic, intermediate, and advanced skills. These data are illustrated in Table 2.

In basic competencies, most respondents (84.5% [n = 71]) perceived themselves as being highly competent (see Table 3 below). In intermediate skills, less than half of the respondents (48.8% [n = 41]) perceived themselves as being highly competent whereas 47.6% (n = 40) perceived themselves as competent. In terms of advanced competencies, only 16.7% (n = 14) perceived themselves as being highly competent (see Table 3).

EDUCATIONAL NEEDS

Regarding trauma topics, the highest educational need included intra-abdominal injuries at 83.3% (n = 70) and spinal cord and head injuries with both listed at 81% (n = 68). The cardiovascular topic thought by respondents to be of highest educational need was cardiogenic shock at 85.5% (n = 71) followed by acute myocardial infarctions and defibrillation/cardioversion with 81% (n = 68) and 79.8% (n = 67), respectively.

A high need for additional education on neurological topics was for stroke, intracranial bleeding, and convulsive disorders with 78.6% (n = 66), 78.6% (n = 66), and 71.4% (n = 60), respectively. High educational needs in the area of respiratory emergencies included blood gas analysis at 78.6% (n = 66) and mechanical ventilation at 77.4% (n = 65) and chronic obstructive pulmonary disease at 75% (n = 63).

Other areas of emergency nursing with a high need for education were triage at 89.3% (n = 75), disaster preparedness at 88.1% (n = 74), and advanced cardiac life support at 88.1% (n = 74). It is worth noting that in all of the above areas no topic scored less than 55% indicating a very high educational need (Table 4).

We also asked respondents about barriers to their emergency educational development. We asked the respondents whether they agreed or disagreed that funding, support from hospital management, access to educational institutions, staffing issues, and time were a barrier to their educational development. The majority (70% [n = 59]) highlighted that funding was the major barrier to their development. Staffing issues (61.9% [n = 52]), time (56.0% [n = 47]), support from management (41.7% [n = 35]), and access to educational institutions (36.9% [n = 31]) were other barriers to nurses' educational development.

TABLE 3
Competency levels for basic, intermediary, and advanced competencies (N = 84)

Competencies	Frequency (n = 84)	%
Basic competencies		
Least competent	1	1.2
Competent	12	14.3
Highly competent	71	84.5
Intermediate competencies		
Least competent	3	3.6
Competent	40	47.6
Highly competent	41	48.8
Advanced competencies		
Least competent	16	19
Competent	54	64.3
Highly competent	14	16.7

Discussion

We studied nurses working in 2 emergency departments, sought to identify current gaps in emergency nursing as a specialty in Kenya, and examined the educational needs specific to nurses working in emergency departments in Nairobi, Kenya.

DEMOGRAPHICS

Most nurses working in the emergency departments had an associate degree and did not have any formal training in emergency/trauma nursing. These findings are similar to other studies conducted in Africa that have drawn attention to the educational needs of nurses in our emergency departments.^{2,6} Although all nurses in the study were registered by the NCK and are thus qualified to be practicing as nurses, basic nursing education does not provide sufficient emergency nursing competence for high-quality and safe care in the emergency setting.

BASIC SKILLS

Limited basic emergency knowledge and skills are included in undergraduate nurse training programs, and not all nursing programs include rotations through emergency departments. Consequently, there is a need for supplementary structured emergency nursing education.⁹

Nurses are key members of any health care system, and their clinical competency is crucially important, particularly in the emergency department. There is an association

between nurses' clinical competency and quality of care.¹¹ Most nurses (84.5%) perceived themselves as being highly competent in basic skills, implying that the nurses are knowledgeable and skilled in providing quality and safe care in terms of basic skills. The lowest scored basic skill was CPR with only 73.8% perceiving themselves as highly competent in this area. This finding echoes Dulas and Brysiewicz⁶ in South Africa who studied nurses in tertiary hospitals and also found that CPR was the basic skill in which most nurses felt less competent. CPR is a critical element of basic life support and is the first-line response to cardiac/respiratory arrest before defibrillation and advanced life support are available. It is expected that nurses, especially those working in emergency departments, should be highly competent in CPR. Although it is commendable that 73.8% of nurses studied perceived themselves to be highly competent, there were also 26.2% who felt less competent in CPR. Bearing in mind that these study centers were referral and trauma centers in which direct care is provided to high acuity patients, this could have direct implications for patient care.

INTERMEDIATE SKILLS

In terms of intermediate skills, less than half of the emergency nurses (48.8%) in our study perceived themselves as being highly competent. In specific skills, ability to prepare and administer drugs in cardiac arrest and ability to manage shock were the areas where respondents were least competent with 53.6% and 56%, respectively. This is an area of concern because emergency nurses often encounter unexpected cardiac arrest with little information about the patients.¹² There is an expectation for nurses to have pharmacological knowledge of indications and adverse effects of the drugs used in cardiac arrest and correct doses, routes, and frequency. The fact that almost half the nurses do not perceive themselves as highly competent could be a plausible reason for poor outcomes in cardiac arrest in Kenya.

Only 56% of nurses studied felt they were highly competent in managing patients in shock. Could this affect the fact that hypovolemic shock associated with diarrheal diseases is the third leading cause of mortality in Kenya?³ The emergency nurse's ability to assess and manage shock is vital.

ADVANCED SKILLS

In advanced skills, only 16.7% perceived themselves as highly competent. This is in keeping with other African studies.^{6,13} One plausible reason is the lack of emergency specialty specific education and training. In

TABLE 4
Educational needs of the participants

Trauma	Agree (%)	Neither agree nor disagree (%)	Disagree (%)
Abdominal and trunk trauma	83.3	8.3	6.0
Spinal cord injuries	81.0	13.0	6.0
Head injuries	81.0	9.5	8.3
Burns injuries	78.6	15.5	6.0
Pediatric trauma	77.4	14.3	8.3
Orthopedic trauma	75.0	16.7	7.1
Obstetrics/gynecology/ pregnancy trauma	67.9	23.6	7.1
Ophthalmic (eye) injuries	67.9	26.2	6.0
Geriatric trauma	65.5	21.4	11.9
Cardiovascular topics	Agree (%)	Neither agree nor disagree (%)	Disagree (%)
Cardiogenic shock	84.5	10.7	4.8
Acute myocardial infarctions	81.0	8.3	10.7
Defibrillation/ cardioversion	79.8	13.1	7.1
Arrhythmias	78.6	14.3	7.1
Cardiac medications	78.6	15.5	6.0
Pediatric cardiac conditions	78.6	14.3	7.1
Acute coronary syndrome	76.2	14.3	9.5
Respiratory topics	Agree (%)	Neither agree nor disagree (%)	Disagree (%)
Arterial blood gas analysis	78.6	11.9	8.3
Ventilators	77.4	11.9	9.5
Chronic obstructive pulmonary disease	75.0	17.9	6.0
Pulmonary embolism	73.8	16.7	7.1
Breath sounds/chest auscultation	71.4	20.2	7.1

continued

TABLE 4
Continued

Respiratory topics	Agree (%)	Neither agree nor disagree (%)	Disagree (%)
Asthma	64.3	23.8	16.7
Pneumonia	58.3	25.0	13.1
Neurological topics	Agree (%)	Neither agree nor disagree (%)	Disagree (%)
Stroke	78.6	8.3	10.7
Intracranial hemorrhage	78.6	9.5	10.7
Convulsions/epilepsy	71.4	17.9	9.5
Meningitis	65.5	22.6	11.9
Other emergency topics	Agree (%)	Neither agree nor disagree (%)	Disagree (%)
Triage	89.3	6.0	2.4
Advanced cardiac life support	88.1	4.8	4.8
Disaster/emergency preparedness	88.1	7.1	3.6
Pediatric advanced life support	86.9	8.3	3.6
Pain management	84.5	10.7	2.4
Poisoning	84.5	9.5	3.6
Prehospital trauma life support	82.1	10.7	6.0
Diabetes emergencies and updates	81.0	10.7	6.0
Pharmacology	78.6	19.0	1.2
Sexual assault/violence	76.2	21.4	1.2
Street drugs	73.8	19.0	4.8
Mental health	73.8	22.6	1.2
Wound care	67.9	25.0	4.8

The higher the score on the agree column, the higher the educational need for that particular topic/domain.

high-income countries such as the United States and the United Kingdom where advanced nursing practice is well defined and advanced practice nurses have more complex roles, pathways to obtaining skills and competencies are also well defined and include graduate-level degrees. Even though advanced practice

nurses' roles are different from those of staff nurses and cannot be directly compared, staff nurses in these countries do pursue additional education in the form of classes such as advanced cardiac life support, trauma nursing core course, and emergency nursing pediatric course placing them in a better position to manage their patients. Educational programs contain the same core components of coursework. The coursework equips the nurses with theoretical knowledge whereas the clinical mentorship training helps develop assessment, diagnostic skills, procedures, and competencies to practice at an advanced level.¹⁴

Formal pathways to the advanced practice nursing role may provide another important avenue to elevate clinical competency. In Australia, the introduction of advanced emergency nurse services has been instrumental in reducing waiting times for low-acuity patients and positively affecting ED service delivery. Evidence supports the value emergency advanced nursing practice roles.¹⁵ If the same were to be implemented in Kenya, it may prove to be beneficial given the high disease burden in the country.

Our study demonstrated a high educational need for emergency nurses similar to other studies from Africa.⁶ The role of the emergency nurse is still developing in Africa, and in efforts to formalize this role, the development of professional bodies such as the Emergency Nurses Society of South Africa, which is open to nurses from all African countries, has been instituted. Formalization of the emergency nursing role would be further supported and strengthened if a professional body such as the Emergency Nurses Society of South Africa were to be formed in Kenya. It would then be specific to emergency nurses in Kenya. In Kenya, the Emergency Medicine Kenya Foundation is one such organization, although it targets all emergency service personnel including physicians and prehospital emergency medical services personnel, all of whom have different scopes of practice. Currently, the Emergency Medicine Kenya Foundation does provide education for emergency nurses through provision of short courses and training.

Short courses such as basic life support, advanced cardiac life support, pediatric advanced life support, and triage have been pivotal in helping emergency nurses remain current with evidence-based practice that is best achieved through continuing professional development and follow-up. However, short courses alone may not be sufficient to meet all educational needs. In Kenya, a number of nursing colleges offer a postbasic specialized associate degree in emergency nursing. Postgraduate-/master's level training is yet to be established.

Implications for Emergency Nurses

Comprehensive patient care needs in the emergency care setting require a more complex understanding of emergency nursing care principles. The results of our study identified focus areas for future specialty training and education in emergency nursing.

Furthermore, the concepts of autonomy and advanced practice are fairly new in nursing education in Kenya; therefore, these skills and concepts will have to be developed through educational advancement and input from all the concerned stakeholders including NCK, Kenyan government, universities, and hospital bodies.

Limitations

The study was limited to 2 tertiary teaching and referral hospitals in Nairobi, Kenya. This restricts generalization in regard to the skills, competencies, and educational needs of emergency nurses in other areas. This was a report of a self-perceived assessment, and no actual measurement of competencies or knowledge was performed. Thus, this study offers useful insights/findings that employers, educators, or regulators may use to improve emergency nursing in Kenya. In addition, the difficulty in recruiting emergency nurses affected the sample size. At the time of recruitment, both centers reported to be suboptimally staffed and may have contributed to the small sample size of the study.

Conclusion

An understanding of the perceived skills and competencies levels, educational needs, and barriers to education among emergency nurses at the Aga Khan University Hospital, Nairobi, and Kenyatta National Hospital was obtained from this study. With low perceived competency levels, skills, and knowledge among most emergency nurses, there is a clear need for educational development to improve basic, intermediate, and advanced skills of emergency nurses.

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