

**WARD BASED CRITICAL CARE: NURSES PRACTICES AND
KNOWLEDGE ON ASSESSMENT AND OBSERVATIONS OF
ADULT CRITICALLY ILL PATIENTS AT
MUHIMBILI NATIONAL HOSPITAL**

**BY
Dickson Ally Mkoka**

**A dissertation submitted in partial fulfillment for the degree of Masters of
Science Nursing Critical Care and Trauma of the Muhimbili University of
Health and Allied Sciences**

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CERTIFICATION

The undersigned certifies that she has read and hereby recommends for acceptance by the Muhimbili University of Health and Allied Science a dissertation entitled; Ward based Critical Care: Nurses practice and knowledge on assessment and observation of adult critically ill patient at Muhimbili National Hospital in partial fulfillment of the requirements for the degree of masters of science nursing critical care and trauma.



Dr T.W.Kohi

SUPERVISOR

Date...10/11/2009

DECLARATION AND COPYRIGHT

I, Mr. Dickson A.Mkoka, declare that this dissertation is my own work and that it has not been submitted to any other university or academic institution for a similar or any academic award.

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DEDICATION

This dissertation is dedication to my lovely wife Lina and my lovely mother Helen.

ABSTRACT

Background. Many patients who are critically ill are cared in general wards outside intensive care units. However, there is no any study in Tanzania undertaken to determine the competency of health staffs in the ward on caring these critically ill patients. This study aimed at assessing the practice and knowledge of ward nurses on assessment and observation of critically ill patients.

Objective. Four objectives guided this study.1)To determine nurses' knowledge on assessment and observation of critically ill patient.2)To determine nurses' practice on assessment and observation of critically ill patient.3)To determine availability of facilities used to assess, observe and resuscitate patient and 4)To identify participants opinions of nurses practices on caring critically ill patient in the wards.

Methodology and Materials. A cross section research design was used, utilizing both questionnaire and review tools. Study population were nurses working in general medical and surgical wards. Descriptive statistical data analysis such as frequencies and percentages were used to make interpretation of findings easier.

Results. The mean score knowledge of participants on indicative signs of critical illness was 2.3(total score was 5).About 81% failed to recognize restlessness or confusion as early signs in detecting hypovolemic shock and that 67% failed to recognize high pulse rate as sign of poor blood circulation.Surprisingly 50% of participants didn't know correct sequence of conducting primary assessment which involve airway, breathing and circulation(ABC).Facilities used to assess, observe and resuscitate patient is not sufficient. Only one out of 12 wards surveyed had emergency tray which was complete. Nurse practices on caring critically ill patients were substandard. About 57% of respiratory rate recorded by nurse caring critically ill patients were not relevant to patients' conditions and that 89% of these patients were fed with unbalanced diet. About 64% of participants indicated the need for in-service training on patient assessment and observation as one strategy to improve their capacity of caring critically ill patient in the ward.

Conclusion and recommendation: Nurses participated in this study demonstrated considerable knowledge and practice gap in area of assessment and observation of critically ill patients in the ward. To improve quality of care given to patients who

develop critical illness, ward nurses should be provided with in-service training to update their knowledge and practice on patient assessment and observation .However this should go parallel with provision of enough facilities for assessment, observation and resuscitation of these critically ill patients who are cared in the wards.

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CHAPTER I INTRODUCTION

Background

Provision of nursing care for critically ill patients in the ward is a challenging process. These challenges come from the disease itself but also from the knowledge, competencies, diagnostic and therapeutic procedures needed to care such patients. The critically ill patients need an environment that ensures maximum delivery of care from dedicated and competent staff with sufficient knowledge and ability to think critically (Harold, 2001). However the question of where critically ill patient is cared is rather not important as it is a worldwide crisis due to scarcity of ICU spaces in most hospitals (Simchen et al, 2007).

Caring for critically ill patients in wards has brought a number of questions and its overall practices need to be carefully examined for the betterness of patient outcome. Many surveys on ward based care of patient who are very ill reported suboptimal care mentioning lack of knowledge and skills of caregiver on critical care being among the causative factors (Gerard et al, 2002). Overcrowding, staff shortage and unreliability of equipments can also interfere with the effective delivery of optimum care putting these patients of further physiological deterioration and death which would otherwise be preventable.

Nurses in Tanzania who are working in the wards have been currently playing a major role of caring critically ill patients for many years now. According to the researcher survey, most of these nurses don't have a critical care training background and they only use their experience and their basic nursing knowledge as their sole source of knowledge in daily care of their critically ill patients. Despite the fact that these nurses are trusted to care patients who need close monitoring from a competent personnel both in terms of knowledge and skills, their basic nursing program address nothing about critical care. However this is the same in many countries where basic nursing education programs do not include critical care courses in their curriculum (Williams, 2005). Meanwhile there is no any research in Tanzania that indicates the impact of ward nursing care of critically ill patients. However a study by Cheatham (2002) showed that knowledge and skills of nurses has significant impact on patient care and outcomes, implying the need of having nurses with specialized skills and

knowledge on critical care to care critically ill patients wherever they are. Faimel and Dawson (2006) insisted on the need for support of knowledge and skills to the ward nurses caring critically ill patients and that teaching of fundamental principles of critical care especially patient assessment and observation, improve nurses competence with positive patient outcome (Vines, 2002; Thorne, 2002).

In Tanzania, the critical care specialty program begun recently in the 2007 and is offered at masters level. This program is run by school of Nursing at Muhimbili University of Health and Allied Sciences. The fact that only few people are expected to graduate at masters' level, it will take many years to have enough critical care nurse specialists covering the need of provision of ward based critical care countrywide. Most of these nurses are expected to work in ICU, administration and as teachers in nursing schools. Therefore there is a need to provide in-service training on basic critical care to nurses who are currently working in the ward for the purpose of equipping them for optimal patient care. However to develop ward based basic critical care curriculum, identification of practice and knowledge gaps of current ward nurses in relation to critical care related to patients assessment and observation is needed. This is important to ensure that course contents are developed to meet the needs of these nurses. Knowledge and practice gaps of ward nurses on assessment and observation of critically ill patient will also shade light on development of basic critical care curriculum for both diploma and undergraduate nursing program in Tanzania.

Problem statement

Many patients in Tanzania who are critically ill are still cared in general wards outside ICU. One of the reason is the limited space in ICU. However ward based care of critically ill patient has been mentioned to be suboptimal in many places. Quillan et al (1998) indicated that up to eighty percent (80%) of critically ill patient received suboptimal care in the ward. One study by Wallis and his fellow (1997) showed that about twenty percent (20%) of patients who die in the general ward are those who were expected to live if at all they would receive appropriate care. Nurses' malpractice and unresponsiveness to clinical urgency mentioned to be contributing factor for ward suboptimal care to critically ill patients. Hogan (2006) indicated that

the nurses' observations and recording of respiratory rate of critically ill patient is minimal and that poor nursing observation account for missing signs of impending critical illness or cardiac arrest in the ward. Few interventions have been employed in the process of optimizing care of patients who is at critical stage in the ward. These include putting serious ill patients in the special cubes where they can be easily seen and reached by nurses. However no interventions have been done in empowering nurses' competency and knowledge of caring critically ill patients in the wards.

Although it is recommended that care given to critically ill must be optimum regardless of where the patient is (Williams, 2005), lack of competent and knowledgeable nurses on basic critical care especially on assessment and observation of the patients can act as hindrance to achieve this goal. Currently there are few nurses with critical care specialty in Tanzania and information regarding knowledge and practices of those who care for critically ill patient in the ward is limited. The fact that a patient in critical condition can be cared in the ward provided that appropriate care is guaranteed (Dorath et al, 1995), necessitate the need of ward nurses to be competent and knowledgeable with basic skills of critical care on assessing and observing patients. Therefore it was the purpose of this study to identify the practices and knowledge gaps on patient assessment and observation of the ward nurses to have a general picture of what should be done to meet knowledge and practical needs for optimum critical care nursing in our wards.

Significance of the study

The study was expected to identify practice and knowledge gaps of nurses on assessment and observation of critically ill patients. Identification of these gaps was expected to provide insight of what support and learning needs these nurses need. This would lead to provision of nurses' in-services training on basic critical care which will focus on assessment and observation skills. These trainings are expected to raise nurse's competence and knowledge on caring critically ill patients in the wards.

The study was also expected to provide information about education needs on basic critical care which can be met during basic nursing program at degree or diploma level. The information obtained could be used to develop curriculum for basic critical

care focusing on patient assessment and nursing observational skills which can be used by nursing schools in Tanzania.

Further more the findings from this study were expected to be used in giving evidence based advice toward improvement of some of the nursing practices with the purpose of improving patient care. The findings would also shade light toward initiation of further action such as formulation of protocols and guidelines related to critical care practices such as standard assessment and observation guidelines or tool that can be used by ward nurses.

Finally the study was expected to identify areas for further studies on nursing care of critically ill patient in the wards.

Definition of terms

The following were operational definitions as they were used in this study.

1. **Nurses knowledge**-basic knowledge on observation and assessment needed to care critically patient in the ward safely. Assessment and observation include airway, breathing, circulation and body fluid balance.
2. **Nurses practices**-all nursing activities involving assessing, observing and recording patient vital signs, patient feeding, care plan and fluid balance charting when caring patient with life threatening condition in the ward.
3. **Critically ill patient**-all patients with actual or potential life threatening condition such as those with heart failure, breathing problems,bleeding,obstetric emergency and ,post ICU patients cared in the wards.
4. **Ward based critical care** is care given to patients in the ward who are critically or potential critically ill and is provided by competent personnel using facilities necessary to care such patients”

Objective

The general objective in this study was to assess the practice and knowledge of ward nurses on assessment and observation of critically ill patient in the ward.

The specific objectives were the following:

1. To determine the knowledge of nurses on assessment and observation of critically ill patient.
2. To determine the practices of nurses on assessment and observation of critically ill patient.

3. To determine availability of facilities used to assess, observe and resuscitate patient who are critically ill in the wards.
4. To identify participants opinions of nurses practices on caring critically ill patients in the wards.

Theoretical framework

This study was guided by the theory of nursing knowledge and Practice as postulated by Kalofissudis and Van Sell (2002).The theory indicate relationship of nursing knowledge and nursing practice in mathematical expression in such a way that the nursing knowledge (NK) is directly related to the nursing practice (P). The theory is summarized by the following formula:

$$(NK)(I)= P$$

Where (I) represents integrated nursing knowledge and skills acquired through cognitive, psychomotor and effective/spiritual domain. (P) represents the whole package of nursing practice and according to this theory it can increase or decrease according to how nurse apply nursing knowledge that he/she has. According to authors nursing practice (P) is determined by the individual nurses (I) ability to integrate and synthesize, times nursing knowledge (NK).

The theory agrees with the fact that nursing practice is the knowledge driven practice profession, involving diagnosis, treatment and evaluation of human response to health and illness(UBC NS,2003).The integrated knowledge base that nurses possess is evidenced in his/her practice through systematic thinking, problem solving and decision making, competency that are essential in nursing practice. Hence the nurse with a good art of caring should blend his/her action based with sound knowledge to attain maximum quality care to the patient. Therefore if the nurses knowledge on basic care of critically ill patient which (include assessment and observation) is insufficient the expected practice of nursing care to the patient will be minimal and the vice versa is true.

Assumption of the study

The main assumption of this study was that nurse's knowledge on assessment and observation is required for the safe practice of caring critically ill patient in the ward.

CHAPTER II

LITERATURE REVIEW

Caring of the critically ill patient

Caring of critically ill patients has been done by critical care specialist in ICU. Critical care nursing is one of the nursing specialty with a focus of caring patient with actual or potentially life threatening conditions. While the concept sounds to be new, its practices can be traced back since 1960s when the first ICU opened (Morton et al, 2005).

Although critical care is linked to ICU, a number of patients who are critically ill are still cared outside ICU environments (Endacolt & Chaboyer, 2006; Sunchen et al, 2004). Most patients who are labeled as seriously ill in the ward do meet the criteria of being admitted to ICU. Lack of enough space and proper referral system of critically ill patients to ICU have sometimes denied such patient admission to ICU. It has been identified in one study that more than eleven percent (11%) of patients qualified for ICU care were admitted in general wards (Nguyen et al, 2004). These numbers can be higher in most of our hospital settings in Tanzania although there is no any statistical evidence for support.

There is great concern of quality of care given to serious ill patients in the ward. Patients with actual or potential life threatening conditions needs closer observations and monitoring compared to other patients whose conditions seemed to be a bit stable. Overwhelmed by the number of patients, the nurses efficient becomes limited and those critically ill patients admitted in the ward receive suboptimal care. A survey done in England showed that fifty four out of one hundred patients (54%) admitted in general ward receive suboptimal care and that their condition deteriorated to the point of being admitted to ICU (Gerrard & Young, 1998). This implies that ineffective care given to patients in the general ward can create an additional number of critically ill patients who end up into being admitted in ICU or dying. A study by Frost and Wise (2007) showed that almost up to twenty five percent (25%) of patients admitted to ICU have deteriorated to the point of cardiovascular arrest while they were in the ward. Improper physiological monitoring and lack of close observation of patients can be a probable way of explaining this phenomenon.

The quality of patients who are post operated and those discharged from ICU has also been questioned and many surveys suggest for the need of improvement. Goldhill (2001) indicated in his study that more than twenty seven percent of patients die in wards post ICU. Such statistics are not evident in Tanzania, but the condition can be worse. Taking of vital signs and the early recognition of any physiologic change is the mandatory practice when caring for any serious ill patient if desired outcome is expected. Many patients who are dying in the ward would otherwise be served if the care provider appreciated basic principles of managing that patient. Wallis and his fellows (1997) in their study to identify causes of death showed that twenty percent (20%) of patients died in the ward as a result of late recognition or improper management of conditions such as hypoxia. Such results indicate that proper assessment of patients in the ward is not done or ignored as it has been shown that nurses sometimes miss to record respiratory rate despite the fact that it is good indicator of cardiac arrest or admission to ICU (Bright et al, 2004). This has also been emphasized by Chellel and Fraser (2001) who mentioned that most basic nursing observations are incomplete and that close observation and interpretation of vital signs done in ICU is not evident in the wards, increasing the risk of further physiological deterioration. However research is needed to examine the core reasons for these shortcomings associated with ward based critical care. What the patient need is close observation and accurate assessment as he/she encounter an actual or potentially life threatening condition.

Nurses knowledge on observation and assessment of critically ill patient

Nurses' knowledge is the core pillar for the nurse to act professionally. Nursing is not only the art but also a combination of knowledge drawn from both socio and biophysiological bases on which nurses build fundamental principles of their daily practice. This implies that the knowledge that nurses possess has a direct effect to the care that they provide to their patient.

Caring critically ill patients create an additional demand to nurses in term of knowledge component. Many surveys have reported suboptimal care of critically ill patients from a medical perspective without mentioning anything in relation to nursing (McQuillan et al., 1998). However nurses to provide optimal critical care to

patients and their families need a strong knowledge base and critical thinking skills, qualities that many nurses who currently care critically ill patients probably miss.

Nurses caring for critical ill patients need to employ a holistic approach using sound scientific knowledge in assessing and responding to the patients needs. They should be aware that critical illness is not only involving physiological alteration but also psychosocial, developmental and spiritual status of the patient (Morton et al., 2005). Appropriate knowledge is needed for the nurse to assess and observe the critically ill patient closely while responding efficiently to their need in general and also provide comprehensive care to patients and their families. It is a matter of fact that a good knowledgeable nurse is one who give maximum care in an environment where the patient is not seen as diagnosis but as a person with a family or significant one who also needs services. However nurses to reach that point they need to be prepared and equipped with in-depth knowledge to provide optimal critical care (Morton et al., 2005).

Research indicates that nurses in the ward are associated with poor assessment and observation of critically ill patient (Ryan et al, 2004) and that many post operated patients develop complications due to lack of nursing care (Apostolopoulou, 2006) . Despite the fact that nursing observation of ward critically ill patient is suboptimal, no research has been done to find out the underlying causes for this claim (Chellel & Fraser, 2002). Instead suggestions to improve ward nursing care of serious patient in many places has been focused in changing work organization and service provision such as outreach service of intensive care nurse to the ward (Chellel & Fraser., 2002). However the main concern when it comes to ward based care of serious patient is not lack of care but an inability of nursing and medical staff to give effective treatment (Gorard, 1999). This can be associated with inadequate preparation of nurses and doctors during their basic training programs. Generally training of health care staffs in acute care is suboptimal as it has been shown that even undergraduate and junior physicians lack knowledge, confidence and competence in managing critically ill patient (Smith et al., 2007). Since the adequate care that critically ill patient can receive depend on ability of a highly trained nurse (Viejo, 2003), nurses should be prepared in such way that they develop core competencies in basic critical care right from their basic programmes (Perkins et al, 2005). Bench (2007) emphasizes that all nurses must

be fully prepared to address the particular needs of critically ill patient through thorough assessment and close observation. This implies that for the long term strategy of improving ward care of critically ill patient, nursing students should be trained early on skills related to care of emergencies and basic acute care, post operative care and pain control with emphasis on basic observation and patient monitoring, so that they would be able to undertake basic measure by the time of their qualification.

Nursing programs in Tanzania both at diploma and degree level don't have any critical care course ingredient. This means that nurses graduating from these schools are not well prepared to care for critically ill patients. While we need to evaluate our nursing program curriculum, something must be done to empower those nurses who are working tirelessly rescuing the life of patients though with little or no knowledge on critical care. Being direct care giver, these nurses should be provided with refresher in-service courses on critical care. However they also need well, evidence based knowledge of basic nursing skills on observation and patient assessment which is up to date (Wallis et al., 1997).

Lack of critical care knowledge of the care giver has been associated with suboptimal care and sometimes generation of new critically ill patients in the ward who end up to be admitted in the ICU. A number of literature suggest possible solutions including critical care nurses in ICU to walk out of their boundaries and provide education and support to ward nursing staff (Gerrad & Young, 1998). Another possible solution is that the ICU nurse should do frequent outreach services aiming at provision of care to the critically ill admitted in the ward (Chellel et al., 2006). The need for special training focused on critical care for ward nurse has also been emphasized (Coad et al., 2002) and that such education should focus on developing basic skills necessary to care patient with serious or potential life threatening illness (Brutler-Williams et al., 2005).

Most nurses working in the ward have good experience of caring seriously ill patients, post operated patients and those patients discharged from the ICU. However to provide high quality care to critically ill patient, one is challenged to use his or her experience with a scientific knowledge base (Davis, 2001). The knowledge base consist of fundamental concepts of anatomy and physiology, knowledge of common disease

process, diagnosis and therapeutic procedures. The ward based critical care training can be useful in imparting these knowledge to nurses. These training should focus on improving nurses' skills on patient assessment and observation as such training proved to increase nurses' confidence and competence (O'Riordan, 2003). However contents of this education should also be designed in such way that they meet the needs of nurses in their facilities (Abner, 2005). For this to be possible, identification of special knowledge and practice gaps in relation to patient assessment and observation that can be addressed during nurse clinical education is important.

Nurses practice on assessing and observing ward critically ill patient.

Practicing critical care in a noncritical care environment is another area that need thorough assessment. Critically ill patients need to get the same standard of care regardless where they are, being in the traditional ICUs, intermediary wards or general wards. Porah and his colleges (1995) recommended that patients in critical condition can be treated in the ward without impairing patient chances for survival. However a number of factors are mentioned to limit ideal practice of nursing critical care in the wards. Disorganization, unresponsiveness to clinical urgency and lack of support are mentioned to impact nursing care to patient and affect their outcome in the general wards (Gerrad & Young, 1998). Further more lack of sufficient equipments like those available in ICU create difficulties for nurses in general wards to perform quality assessment, observation and monitoring of the patient condition.

It is obvious that the general ward environment for critically ill patient is very different from that of ICU. While nurses in ICU care a few number of patients, this is not the same in the general ward where one nurse can be responsible for many patients. In such kind of situation, nurses demonstrate poor practice of care and fail to identify and correct problems early and prevent patient condition to deteriorate often to a point where they require intensive care admission (Gorard, 1999). Despite of being early indicators of developing critical illness, Ryan and her colleges (2004) pointed out that respiratory rate and fluid balance in the busy wards have been missed in nursing care documentation. However there are basic nursing practices which are needed in caring critically ill patient. Morton et al (2005) commented that nurse need to diagnose and manage life sustaining physiologic functions in unstable patients,

manage crisis by using skilled know how, provide comfort measures, caring for patients families, end of life issues, communication, monitoring and leadership. This means that nurses are required to be competent and able to do comprehensive observation of patient conditions and respond accordingly. They also suppose to interpret some useful information like abnormal vital signs and provide basic measure while seeking for further help. Lack of such practice can compromise care to the patient and affect their outcome (Derhan, 2007).Hence nurses need to have good assessment and observation skills in a good working environment to offer optimal care to critically ill patient in the ward.

Summary

Research indicated that critically ill patients who are cared in the ward receive suboptimal care. Numbers of factors have been mentioned to account for this phenomenon. Lack of competent nurses with basic assessment and observation skills in the ward is mentioned to be one of the reasons. This shortcoming has been pointed out to be associated with lack of basic skill training in many nursing and medical schools. However poor working environment and lack of support worsen the condition further. Nurses in the ward need to be empowered with basic critical care knowledge and skills focusing on patient assessment and observation. To do that well evidence based basic critical care curriculum need to be developed which address the real needs of these nurses in the ward. This curriculum can be developed after the practice and knowledge gaps of nurses who are current working in the ward has been identified through thorough assessment of their practices and knowledge on basic assessment and observation of critically ill ward patients.

CHAPTER III METHODOLOGY

Design

The study was descriptive cross-sectional study as the data was collected once and data obtained was described. This method was adopted to allow getting required information as this research intended. The study focused to determine the participant's knowledge and practices status rather than giving information on nurse's experience. The quantitative approach was hereby suitable to describe the extent of gap in nurses' knowledge and practice on caring critically ill patients.

Setting

The study was conducted at Muhimbili National Hospital (MNH). The selection of the site was based on the following reasons; Muhimbili National Hospital is the national referral hospital. Apart from receiving patients from other zone referral hospitals, it also serves the three Dar es Salaam municipal hospitals. Most patients who are referred to Muhimbili National Hospital are very sick at the critical stage of their disease. The hospital has one general ICU with eight beds and therefore many critically patients who require ICU admission are ending up into being cared for in general wards. Many nurses working in the ward have good exposure of many critically patients and are considered to be experts in caring them. Currently the hospital serve approximately 1,000 outpatients daily and admit about 1,000 patients per week. With the current introduction of heart surgery the number of patients who require close observation increases and most of these patients are cared for in the wards post operation.

Study population

The study population in this study were nurses both registered and enrolled nurses in Tanzania. The total number of nurses in Muhimbili National Hospital is 803. Registered nurses are 533 and enrolled nurses are 270. There are few nurses with critical care specialty (20 nurses) who were working in Muhimbili Orthopaedic Institute (MOI) as ICU and emergency nurses. Registered nurses are the one with diploma, advance diploma or degree in nursing. This includes intern nurses who are

doing their practical after they have graduated with degree in Nursing and they have temporary registration from Tanzania nursing council. Enrolled nurses are the one who after they have certificate in nursing they did special upgrade course in nursing.

Sample size

A study done to evaluate knowledge of ward nurses on managing acute illness in the ward indicated that sixteen percent (16%) of staff recognized all signs of respiratory distress (Ingleby et al, 2003). The same proportion of ward nurses was expected by this study to have knowledge on signs indicating critical illness such as abnormal vital signs, oliguria and other basic practice of critical care. The exact sample size was calculated from the following formula as suggested by Xu (1999)

$$n = \frac{Z^2 (p (1-p))}{d^2}$$

Where n-is the sample size

Z-is the Z statistics for the desired level of confidence (confidence level).

p-is the estimate of expected proportion with the variable of interest in the population.

d-is the affordable margin of error (confidence interval).

Then affording a margin of error of plus or minus (\pm) 5% at a confidence level of 95% with the estimated proportion of 16%, the sample size will be

$$\begin{aligned} n &= \frac{1.96^2 (0.16(1-0.16))}{0.05^2} \\ &= 206 \end{aligned}$$

The sample size was supposed to be 206 registered and enrolled nurses. This is about 26% of the total population of nurses working in Muhimbili National Hospital. This study involved nurses who worked in medical and surgical wards only. Total numbers of nurses working in these words was 219. Twenty six percent of this number was 57. Therefore the study expected to involve 60 nurses (both registered and enrolled) who are working in surgical and medical wards. However the total number of

participants recruited was 90. I expected to assess the same number of patient case notes (60 patient case notes) with critical/acute illness from medical and surgical wards including all post operated patients admitted in these wards. However only 37 patients' case notes were able to be reviewed at the end of the study. The patients' case notes were assessed for documentation on care given by nurses as indicated in their nursing care plans, fluid balance charts and nursing observation charts. All medical and surgical wards (about 24) were expected to be assessed for the presence of equipments needed for patient assessment and observation. But only 19 wards were managed to be surveyed at the end of the study.

Sampling procedure

Study participants were selected conveniently. This involved a selection of participants who were available at the time of data collection. The selected participants were asked for their participation in the study. The participants were selected from surgical wards (58 participants) and medical wards (32 participants). Sampling of patient case notes were the same as that used for nurses. All serious ill patients and post operated patients found during the study period were included. This involved review of 37 patients case notes from surgical and medical wards. The study included adult surgical and medical wards of Muhimbili National Hospital. Permission to conduct the study was obtained from the hospital administration (see copy of permission letter at the end of the report). The block manager of medical and surgical blocks were consulted by the researcher who explained the purpose of the study and asked for assistance to conduct the study in the wards.

Inclusion criterion for nurses: registered and enrolled nurses who worked in surgical and medical wards. The intern nurses working in these wards were also included.

Exclusion criteria for nurses: all nurses working in ICU, theatre, paediatric, psychiatry and maternity block.

Inclusion criteria for patient's case notes: case notes of all serious and one day post operated patient found during study period

Exclusion criteria for patient's case notes: case notes of all other types of patient

Data collection

The data collection took place in March 2009. A minimum of thirty questionnaires out of ninety were administered and collected per week. The permission to collect data was obtained from the hospital executive director. On the first day of data collection the block manager was consulted and purpose of study was explained to her or him. Respective ward in charge was then met and explained the purpose of study. Then trained nurses found in the ward were approached face to face and oral information about the study was given. Upon agreement to participate, he or she gave written consent before filling the questionnaire. Participants were fully supervised while filling the questionnaire to avoid consulting books or discuss each other. The supervision was done by the researcher himself.

Data were collected using structured questionnaire (see Appendix I), chart review guide (see appendix II) and equipment review guide (see Appendix III). Both tools were in English and were developed by the researcher himself using literatures read by the researcher.

Structured questionnaires-it consisted four parts. The first part used to collect demographic information related to participant's age, years of working experience, participant's nursing education and current ward the nurse where he/she works. The second part consisted of questions about knowledge on some basic items of observations and assessment focusing on patient airway, breathing and circulation (ABC). Total of five multiple choice questions used to assess participants' knowledge of indicative signs of critical illness and correct sequence to conduct primary assessment i.e. airway, breathing and circulation. Each correct response worth one mark. Possible score ranged from 0 to 5 with mean score of 2.5(50%) used as cut off point between low knowledge and high knowledge. Fifty percent has been used at Muhimbili University of Health and Allied Sciences (MUHAS) School of Nursing as a cut off point for passing examinations. The third part of the questionnaire used to collect data related to participants' experience of caring critically ill patients, exposure to any training related to life support and whether they had been taught CPR while at

basic nursing education. The last part of the questionnaire asked participants to give their opinions of nurse practice on caring critically ill patient in the wards.

Chart review guide - was used to collect data about presence and completeness of nursing care plan and fluid balance chart in the patient case notes as these were done by nurses and reflect nurse's practices on caring critically ill patients. The tool was developed by the researcher. The charts were reviewed by the researcher himself.

Equipment review guide-was used to assess equipment used for observation and assessment in the wards. The tool was developed by a researcher and collected data on whether there were any guidelines in the ward for performing assessment and conduct cardiopulmonary resuscitation (CPR), presence of resuscitation equipments including oxygen masks, nasal prongs, oxygen cylinder, emergency drugs and emergency trays, stethoscope sphygmomanometer and thermometer.

Three instruments used to measure to measure various objectives as shown in the table below

Research objective	Questionnaire	Chart review guide	Equipment review guide
Knowledge on assessment And observation	Questions 1 to 4 on knowledge test		
Nurses practice on assessment and observation	Questions 1 to 3 on practice test	Question 2 to 8	
To determine availability of equipment for assessment and observation			Questions 1 to 8

Validity. Content and face validity of the three tool used in this study were assessed by three experts who were experienced nurses with critical care specialty and educators. They checked if tools had content that covered objectives, literature and whether questions are clear. Any modification of the tool or questions was done afterward. Content validity is concerned with the sampling adequacy of the content areas to be measured and is based on expert judgement (Polit & Hungler, 1987)

Reliability. Internal consistency was used to measure reliability of five items of the knowledge part in the questionnaire ($\alpha = 0.3$). Small coefficient obtained doesn't mean that the tool is not reliable as this could be due to small sample size and small number of items in the scale as this normally tend to affect Cronbach's alpha estimation (Spiliotopoulou, 2007). To establish if participants in this study would be able to understand the instructions, the items and respond correctly the instrument, the first 10 subjects were used as a pilot sample. There were no major difficulties in responding to the questionnaire, especially because the researcher clarified and concern from participants related to questions and the instruction was descriptive. Approximate time to fill the questionnaire was between 20 to 25 minutes.

Data analysis

Descriptive statistics was used to analyze data that obtained from questionnaire and review tools using percentages, frequencies and graph. Data were coded and entered into a computer programme running the Statistical Packages for Social Sciences version 12 to answer research objectives. Descriptive analysis of research objectives involved frequencies, percentages and graph.

Ethical considerations

Ethical clearance was obtained from the MUHAS Research and Ethical Committee. Permission to access study sites was obtained from Muhimbili National Hospital administration (see Appendix 5). Informed consent was obtained from participants by signing a consent form (see Appendix 4). The participants were informed on their rights to decline to answer any question or withdrawal from the study at any time. Confidentiality was guaranteed as participants were identified by numbers and not their names to ensure anonymity. All data obtained during the study were stored in a locked box in the investigator's house. Data planned to be reported in the aggregate form as research report and individual results will not be reported.

Submission and dissemination of the research results

It was expected that findings from this study would generate important information on care of critically ill patient in the ward which would have implication to nursing quality practice and nursing education in Tanzania in general. Therefore copies of the research report was planned to be disseminated to the following areas; The school of Nursing -MUHAS where it will be submitted for award of Master degree in Critical care and trauma, the Muhimbili National Hospital, medical library and the Ministry of Health and Social Welfare. For the spread of the knowledge the report will also be published in the academic workshops and nursing associations' conferences in and outside Tanzania.

CHAPTER IV

RESULTS

This chapter includes description of results starting with analysis of participants demographic data. Analysis of data regarding nurses' knowledge and practice on patient assessment and observation are also described. The last part of this chapter describes analysis of data on availability of facilities used to assess, observe and resuscitate patients and the opinions of nurses' practices on caring critically ill patient in the ward.

General Demographic Data

A total of 90 subjects completed the questionnaires. To analyze the data the subjects were categorized by their nursing education level; years of nursing experience; age and specific ward (surgical and medical).The 90 subject consisted of 20 enrolled nurses (those with certificate) and 70 registered nurses (those with diploma, advanced diploma and degree).The number of subjects for each area was: 58 subjects from the surgical wards and 32 subjects from medical wards (Table 1)

Table 1. Demographic Characteristics of Study Participants (n=90)

Characteristic	Frequency(n)	Percentage (%)
1.Nurse education		
-Enrolled	20	22
-Registered	70	68
2.Work experience		
-Below 2 years	17	32
-Above 2 years	73	58
3.Age		
-Below 30	19	33
-Above 31	71	67
4.Ward		
-Surgical	58	64
-Medical	32	36

In analyzing years of nursing experience in table 1 above, 68% of the participants had greater than two years of work experience.

Eighty percent of participants showed that they ever cared patients who are critically ill patient in the ward during their working years (Table 2). Though most participants (75%) learned how to carry out cardiopulmonary resuscitation (CPR) while at school, only 23% of them indicated their attendance to in-service training on life support skills while they were at work (Table 2)

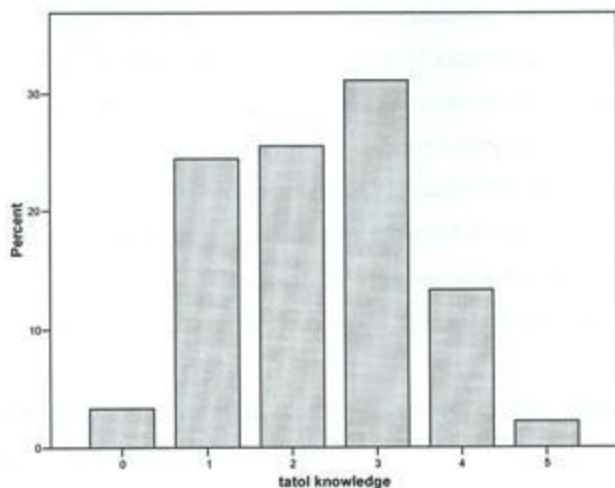
Table 2. Participants' Response on Training Related to CPR, Life Support Skills and Experience of Caring Critically Ill Patient in the Ward.

Item	Yes		No	
	(n)	(%)	(n)	(%)
1. Ever cared critically ill patient in the ward	88	98	2	2
2. Ever learned cardiopulmonary resuscitation at school	75	83	15	17
3. Ever attended in-service training on life support skills	23	26	67	74

Nurse knowledge on assessment and observation of critically ill patient in the ward

Figure 1 below show participants' total score of basic knowledge on assessment and observation. Five items in the questionnaire were used to assess nurses' basic knowledge on assessment and observation. Each item worth 1 mark. Few participants got a total score of 5. Majority of participants got a total score of 3. Mean score of participants was 2.3.

The knowledge of participants on individual items of basic knowledge of assessment and observation are indicated in table 3. Seventy four percent of participants know signs of acute renal failure. About 81% of participants they don't know that restlessness or confusion is early signs in detecting hypovolemic shock. Forty percent of participants (n=45) know the correct sequence of doing quick assessment to patient with acute illness which include assessment of airway (A), breathing (B) and circulation (C). Thirty three percent (n=30) of participants didn't know that high pulse rate is indicative sign of poor blood circulation (table 3).



Mean score= 2.3

Fig1. Participants score on basic knowledge on patient assessment and observation

Table 3. Participants Knowledge on Individual Items of Basic Knowledge on Assessment and Observation (BKAO)

Item	Knowledgeable	Not knowledgeable
1. Restlessness or confusion as early sign in detecting hypovolemic shock	17(19%)	73(81%)
2. High pulse rate as sign of poor blood Circulation	30(33%)	60(67%)
3. Correct sequence in doing quick Assessment	45(50%)	45(50%)
4. Sign of respiratory distress	49(54%)	41(46%)
5. Sign of acute renal failure	67(74%)	23(26%)

Nurses Practices on Observation and assessment of critically ill patients.

Information of nurses' practices on caring critically ill patient was obtained from case notes of critically ill patient found during the time of study (table 4). A total number of thirty seven (n=37) patient case notes were reviewed for the nurse documentation

on nursing care plan and fluid balance chart. Among the patient case notes reviewed, nursing care plans were present in only 17 case notes (46%). This means that less than 50% of critically ill patient whose case notes reviewed did not contain nursing care plan written (Table 4). Fluid balance charts were present to 31 case notes though some of them (46%) the fluid balance was not calculated after twelve hours. Almost all case notes reviewed had respiratory rate recorded though 43% of these records were not relevant to patient condition. Nurses seemed to feed their critically ill patients although only 11% of patients were fed with balanced diet as indicated in charts reviewed (table 4).

Table 4. Nurse Practices on Caring Critically Ill Patient as Indicated in Charts Reviewed using the Study (n=37)

Item	Number	Percent
1. Written nursing care plan		
-Present	17	46%
-Absent	20	54%
2. Fluid balance chart		
-Present	31	84%
-Absent	6	16%
3. Calculated fluid balance		
-Calculated	20	54%
-Not calculated	17	46%
4. Type of food patient fed		
-Balanced diet	4	11%
-Not balanced diet	33	89%
5. Respiratory rate record		
-Relevant	16	43%
-Not relevant	21	57%
6. Patient observation/day		
-More than 4	17	46%
-Less than 4	20	54%

Most nurses observe and assess their critically ill patient less than four per day (54%) as it can be seen in table 4 above.

Availability of Facilities used to assess, observe and resuscitate patient in the ward

The table below indicates equipment necessary for caring critically ill patient including assessing and observing of such patient in the ward from 19 wards surveyed during the study.

Table 5. Resuscitative Equipment Available in the Ward (n=19)

Item	Present	Not present
1.Full oxygen cylinder	12	7
2.Emergency tray	12	7
3.Ambu bag	11	8
4.Oxygen mask	8	11
5.Suction machine	7	12
6.Emergency drugs	8	11
7.Nasal prongs	0	19
8.CPR guidelines	0	19
9.Assessment guidelines	0	19

Nineteen wards both surgical (12) and medical (7) were included in the survey. While nasal prongs, guidelines for conducting cardiopulmonary resuscitation (CPR) and assessing acutely ill patient were not present in all wards surveyed, 12 wards out of 19 had full oxygen cylinder (Table5).Availability of other resuscitative equipments varied in different wards as indicated in table 5 above.Ambu bags were present in 11 wards; oxygen mask and emergency drugs were present in 8 wards while working suction machines were present in 7 wards only. While emergency tray were present in 12 wards surveyed, only one ward had a complete emergency tray (Table 6).Again of the 12 wards were emergency tray present, well labeled emergency trays were found in 9 wards and easily accessible emergency trays were found in 10 wards (Table 6)

Table 6. Availability of Complete, Well labeled, Easily Accessible Emergency Tray in the Wards

Item	Number of wards(12)
1. Complete emergency tray	
-complete	1
-incomplete	11
2. Well labeled emergency tray	9
-Labeled	3
-Not labeled	
3. Easily accessible emergency tray	
-Accessible	10
-Not accessible	2

Participants opinions of nurses practices on caring critically ill patient in the wards

Table 7 below indicates participants' opinions of nurses' practice on caring critically ill patient in the ward. The need for having more resuscitative facility including enough emergency drugs and working resuscitative equipments were mentioned by 69% of the participants. About 64% of participants indicated that nurses need frequent in-service training to build their capacity both in term of skills and knowledge and hence improve their practice of caring critically ill patient in the ward. Staff commitment and a good team work in caring acutely ill patients was mentioned by only 9% of participants. Availability of adequate staff who are well skilled was mentioned by 57% of participants and need for staff motivation was mentioned by 18% of participants (Table 7)

Table 7. Participants opinions of Nurses Practice on Caring Critically Ill Patient in the Ward

Opinion	Mentioned	Not Mentioned
1. More resuscitative facility are needed	62(69%)	28(31%)
2. Nurses need more in-service training on critical care	58(64%)	32(36%)
3. Adequate staff are needed in the ward for close patient observation	51(57%)	39(43%)
4. Staff need to be motivated	16(18%)	74(82%)
5. Staff commitment and team work is needed to care critically ill patient in the ward	8(9%)	82(91%)



CHAPTER V

DISCUSSION

This chapter begins with a discussion of study findings. This is then followed by discussion on identification and limitation as well as implication of this study for nursing practice. Lastly, recommendation for further research is outlined.

Nurses knowledge on assessment and observation of critically ill patient in the ward

Findings from this study indicate that generally there is low mean score of study participants on assessment and observation. By considering some indicative signs of critical illness which nurses focus during observation and assessment; nurses had considerable knowledge gap as shown in table 3. Areas of concerns include lack of knowledge on detection of hypovolemic shock, recognition of poor blood circulation, recognition of correct sequence of conducting primary survey and recognition of respiratory dysfunction as shown in table 3 of the result. Similar findings were observed in the study by Brown and his colleague (2005) which looked at nurses' knowledge on patients' observations. From their study it was found that 56 percent of respondents got less than 50 percent of the knowledge score.

Most participants from this study were not knowledgeable on oxygen therapy, respiratory assessment, recognition of oliguria and normal respiratory rate. These findings suggest that though nurses care for critically ill patients in the wards they do so with insufficiency knowledge to back their practice especially on assessment and observation. Despite of its contribution to suboptimal care, there is little evidence from the literature which explain this knowledge gap of ward nurses on assessing and observing critically ill patient. However lack of proper pre-service education preparation on issues related to assessment and observation can describe this existing knowledge gap. Cho and his colleague (2003) pointed that limited education and lack of emphasis that is given regarding patient observation and assessment at both undergraduate and postgraduate level are among the barriers to quality nursing practice. Hence insufficiency knowledge may have impact to patient outcome ranging from incorrect patient assessment and observation to interpretation and provision of appropriate intervention. Garside and Prescott(2008) stated that lack of nurses

knowledge on accurate interpretation of findings obtained from assessment and observation made them to mismanage patient resulting to increase in mortality, morbidity or unavoidable ICU admission. This implies that an immediate intervention is needed to empower ward nurses in terms of knowledge for better patient outcome. Also nursing education curriculum needs to be reviewed and include basic critical care to prepare future nurses who are competent to care for critically ill patients in the wards.

Nurses practices on observation and assessment of ward critically ill patient.

The study found that a high proportion of participants agree that they do care for critically ill patients in the wards. These findings correspond with the literature which indicates that many critically ill patients are cared for in the wards due to lack of space in ICU and that many patients develop acute illness while in the wards (Gorard, 1999). However, it was observed from this study that nurse practice related to observation and assessment of such patients is suboptimal. While the hospital advocates that each critically ill patient should have a written nursing care plan, the study found that some nurses do not do that and the frequency of assessment and observation of such patients is minimal. Critically ill patients in wards need close monitoring as those in ICU and that frequency of observation should be based on clinical condition the patient has rather than traditional routine done in the wards (Zeitz, 2006). In this way, nurses will be able to discover early if a patient's condition is deteriorating and provide early intervention. The report given by the National Patient Safety Agency in the United Kingdom (2007) said that death of critically ill patients that occur in general wards were related to failure of nurses not recognizing or acting quickly when patients' conditions deteriorate. Monitoring of fluid balance is one of the vital roles a nurse can do when caring for patients who are critically ill. The study found that 46 percent of patients surveyed during the study had their fluid balance charts incomplete. This finding was similar to a study done by Chellel and her colleague (2002) where she found that 43 percent of patients surveyed had their fluid balance charts not completed and that about 39 percent who needed fluid charts did not have them. This shows that while monitoring of fluid balance is highly done for patients in ICU, those who are seriously ill in the wards the practice is of little concern. This in turn can cause negative outcomes for patients as poor

monitoring of fluid balance had shown to contribute to post-operation death of patients stayed in wards (Bright et al, 2004).

Nutrition status of critically ill patients need to be monitored very closely .This study found that though nurses feed their patients, about 89 percents were fed with unbalanced diet .Again survey findings by Chellel and her colleague (2002) indicated that 26 percent of the patients included in their study were not fed for more than three days while in wards. This imply that nurses caring for patients who are critically ill in the wards pay less attention to nutrition status of their patients despite of its importance to overall patient outcome.

Nurses in this study found to take and record respiratory rates of their patient. However the study found that 57 percent of the respiratory rates recorded in the patients' case notes were not relevant to patients' condition. Such findings rise doubt whether nurse really perform respiratory assessment including counting of respiratory rate to their patients or they just estimate and document. Review of literature observed that observation of vital signs is rarely done in sick patients and that respiratory rate is least recorded variable(National Patient Safety Agency,2007;Duff et al 2007).Further research need to be done to describe this scenario. However lack of competency to perform respiratory assessment, failure of nurses to appreciate its importance to patient monitoring and workload can be hypothesized to be a causal factor for this.

Availability of Facility used to assess, observe and resuscitate patient in the ward.

The researcher was interested to know whether wards were participants work are well equipped with facilities that help these nurse to care for the critically ill patients. This was important as availability of such facilities ensure good environment of nurses practices to the critically ill patients in the wards. The study identified significant shortage of such facilities in these wards. Out of 12 wards assessed by the researcher, only one ward had complete emergency tray. In other wards equipments like oxygen cylinders, suction machines and emergency drugs were missing. This findings imply that patients whose condition are critical in the wards are at risk of receiving appropriate interventions due to lack of equipments .National Patient Safety Agency

in United Kingdom (2007) reported that 14 out of 64 deaths that occurred in the year 2007 was due to failure of resuscitation because of resuscitative equipments were not there, missing, not functioning or lack of emergency drugs. The report further noted that six cases of deaths out of 64 were associated with report of empty oxygen cylinders and faulty suction equipments. However provision of resuscitative equipments in general wards is generally inadequate and uneven (Hogh et al,2005). Thus to ensure good practice of nurses caring for critically ill patients in the wards there is a need to equip all wards with well functioning resuscitation materials.

Participants' opinions on nurses practice on caring critically ill patient in the ward.

Participants in this study identified various areas to be look at in order to improve nurses' practice on caring critically ill patient in the wards. Improvement of resuscitation facilities and nurses need for critical care trainings were the most mentioned areas by participants. Participants in this study had minimal knowledge on patient assessment and observation. The study also identified a significant shortage of equipments for resuscitation in the wards. This could be a reason why participants pointed out the need for in-service trainings to update their knowledge. In their analysis to identify education and training needs to staff, Wood and her colleague(2004) identified educational needs of general ward nurses and suggest that an structured educational program should be provided to improve the knowledge and skills of ward nurses. Formal critical care education for ward nurses has been adopted in country like United Kingdom as an attempt to improve knowledge of their staffs (Cutler 2002). Since knowledge influence nurses practice, provision of basic critical care trainings for in-service nurse staffs can be a good strategy to make nurse competent in caring ward critically ill patients. However such training should be provided in such away that the education needs of nurses are met.

Limitations of the study

A limitation of this study was that findings in this study are derived from a small number of sample size. A generalization that ward nurses had insufficiency knowledge and substandard practice on assessment and observation of critically ill patient cannot be made due to small sample size. However, the participants were conveniently selected from different medical and surgical wards across the hospital and included nursing staffs of different positions, grades and experience. In addition, the use of different approach to collect data used by researcher such as equipment review, chart review and interview methods in findings nurses opinions add weight to the conclusions.

A second limitation is information bias. The researcher reviewed patient charts to determine nurse documentation of patients information related to feeding, observation of vital signs, care plan and monitoring of fluid balance. The researchers use this information to determine nurse practice on assessing and observing patients who are critically ill. No attempt was made by the researcher to verify this information by asking individual patients if they had been assessed or taken observation by nurses. An observation method would be a good method if valid information were to be collected.

Implications of findings for nursing practice, nursing education and nursing management

Several implications arise based on the results of this study

1. Nurses in this study demonstrated low knowledge on area of patient assessment and observation. This imply that nurse provide care to critically ill patients with little knowledge and hence risk quality of care to such patients. This knowledge gap should be met through in-service training programs. Area of emphasis in these programs should include patient assessment and observation, basic anatomy and physiology cardiopulmonary resuscitation and pharmacology of emergency drugs.
2. Knowledge and practice gaps identified in this study imply that nurse educator need to emphasize in a very special way assessment and observation of acutely ill patients when they train their students in their basic nursing education. More

emphasis should be on the importance of interpretation of findings they obtain from assessment and observation.

3. Lack of enough facilities used to assess and observe patients in the wards can affect nurses' practice on caring such critically ill patients. Nurse can fail to provide required intervention due to problem related to facility availability. Hence nurses' empowerment should be done parallel with provision of enough facility in the wards.

6. No guidelines for conducting cardiopulmonary resuscitation (CPR) and assessing patients who are critically ill was found in all wards surveyed. This means that nurses in the wards assess and do CPR without any tool to guide their practice. Absence of such guidelines increase difficulties in nurses practice as nurse don't have any tool to guide their decision on various interventions related to patient conditions.

Recommendations for practice and further research.

1. Hospital administration need to develop guidelines that will be used by ward nurses as tool to guide assessment and actions to be taken when there is any abnormal findings obtained. The hospital can adopt the Early Warning Scoring (EWS) as guidelines for patient assessment.
2. Hospital administration should develop a formal education program of basic critical care to be provided to all nurses working in wards. This education program should be conducted in such away that it addresses the knowledge and competency gap identified in this study. Area of emphasis in this program should include patient assessment and observation, basic anatomy and physiology, cardiopulmonary resuscitation and pharmacology of emergency drugs.
3. Nurse educators should consider the need to develop basic critical care course which can be taught at diploma or undergraduate level. This course should focus to prepare new graduates with basic knowledge and competency necessary for caring critically ill patient in the ward. This will ensure patient quality care without incur much cost in term of time and money which can be used to develop personnel at specialty level.
4. In attempt to improve care of patients who are critically ill in the wards effort should be made by the hospital administration to ensure that there is adequate

equipments used to assess, observe and resuscitate patients. Nurse working in the wards should be taught how to use these equipments. This will enable them to provide early intervention to the patients who develop acute illness in the wards. Auditing committee should have regular check of the equipments and replacing any missing equipments.

5. Some wards were found to have incomplete emergency trays or other emergency trays not well labeled or located in a place not easily accessible. Therefore the hospital administration should ensure availability of complete emergency trays in all wards and that these trays should be reached easily.
6. The same research can be repeated involving larger sample size of nurses from different hospitals in Tanzania. One hospital from each five zones can be randomly selected and then participants from medical and surgical wards can be conveniently recruited in the study.
7. An explorative study can be designed to determine nurse experience on caring critically ill patient in the wards. Being explorative, such study can yield useful information which describes the nature and context on which nurses care such patient outside ICU. This can be accomplished by conducting focused group discussion involving nurses from the wards.
8. An observation study can also be done to determine nurse practice of assessing and observing critically ill patient. The study should focus to find out whether nurses assess and observe critically ill patients and if they do with what competency. This study can be accomplished by the researcher select some wards in a particular hospital and conduct participatory observations of the practice.

Conclusion

This study support other few studies and literature reviews by showing that nurses working in general wards care critically ill patients with suboptimal practice and minimal knowledge on patient assessment and observation of critically ill patients. Resuscitation equipments in the wards are not enough and not equally distributed and that there are no tools like guidelines for patient assessment and conduction of

CPR. In-service trainings for ward nurses and improvement of resuscitation facility were the most mentioned needs by participants of this study. It is imperative therefore to establish formal basic critical care trainings for in-service ward nurses which focuses on areas of patient assessment and observation. Improvement of nurses' knowledge and practices on patient assessment and observation should be parallel with the improvement of resuscitation facilities, teamwork and increased staffs. This study offers some initial information that serves to stimulate further inquiry into this important professional issue in medical field which is now emerging worldwide. Nursing schools should now consider the need to prepare intensively their students to care for critically ill patients found in the wards. Patient assessment and observation should be well emphasized during basic nursing education programs to ensure students graduate with sufficient competencies to care patients confidently.

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APPENDIX I**QUESTIONNAIRE ON NURSES PRACTICE AND KNOWLEDGE****Instruction.**

This questionnaire contains questions in relation to participant's demographic data, knowledge and practice related to basic nursing observation and assessment. Read questions carefully and answer accordingly.

Demographic data. Circle correct response

1. Ward
 - (a). Surgical
 - (b). Medical
2. Age
 - (a). 20- 30
 - (b). 31 and above
3. Nursing education
 - (a) certificate
 - (b) diploma
 - (c) advance diploma
 - (d) degree
4. Working experience
 - (a) below 2 year
 - (b) 2 – 10 years
 - (c) 11- 30 years

Knowledge assessment .Circle correct response(s)

1. The following are signs of poor body blood circulation.
 - (a).Cold extremities
 - (b).Capillary refill \geq 2 seconds
 - (c).Pulse \geq 90b/m
2. During quick assessment of patient whose condition is deteriorating, what should be checked first
 - (a).Breathing

- (b).Circulation
- (c).Airway
- 3. The following can help you to detect possibility of renal failure to your patient
 - (a)Urinary output >0.5 ml/kg/hr
 - (b) Urinary output < 0.5 ml/kg/hr
- 4. The following respiratory rate for adult is indicative for the need of respiratory support
 - (a).16 – 18 b/min
 - (b) < 8b/min or >28 b/min
 - (c).16 < or > 20 b/min
- 5. The following is one of the early signs in detecting signs of hypovolumic shock
 - (a).Low BP
 - (b).Restlessness or confusion
 - (c).Low urine output

Practice assessment

- 1. Have you ever cared serious ill patient.....(indicate YES or NO in space provided)
- 2. Have you ever learned life support skills including cardiopulmonary resuscitation(CPR) during your nursing education (indicate YES/NO in space provided)
- 3. Have you attended any in-service courses on life support skills..... (YES/NO)

Opinions on nurses practice on caring critically ill patient in the ward

- i.....
-
-
- ii.....

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iii.....

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vi.....

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v.....

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APPENDIX 2

OBSERVATION GUIDE ON NURSES DOCUMENTAION OF OBSERVATIONS AND ASSESSMENT

The tool will be used to assess ward documentation of observations of serious patient through patient case note

1. Diagnosis.....
2. Presence and completeness of nursing care plan.....(Yes/No)
3. Does patient need fluid balance chart.....(Yes/No)
4. Presence of fluid balance chart.....(Yes/No)
5. Nutrition care for the last 48 hours.....(Yes/No)
6. Recorded respiratory rate for the last 8 hours.....(Yes/No)
7. Complete filled fluid intake and out put for the last 24 hours.....(Yes/No)
8. Frequency of observation per day.....

APPENDIX III

WARD NO.....

EQUIPMENT REVIEW GUIDE

1. Presence of oxygen cylinder..... (Yes/No)
2. Presence of mask..... (Yes/No)
3. Nasal prongs..... (Yes/No)
4. Ambu bags..... (Yes/No)
5. Presence of Sphygmomanometer..... (Yes/No)
6. Presence of stethoscope..... (Yes/No)
7. Presence of thermometer..... (Yes/No)
8. Presence of guidelines for carrying CPR..... (Yes/No)
9. Presence of assessment guidelines of serious ill patient..... (Yes/No)
10. Presence of emergency tray..... (Yes/No)
11. Presence of emergency drugs..... (Yes/No)

APPENDIX IV

INFORMED CONSENT FORMS

ID NO.....

Consent to participate in the study

Greetings, I Mr. Dickson student of Master degree in Critical Care at Muhimbili University working in this research with the objective of assessing the nurses knowledge and practices on caring critically ill patient in the ward.

Purpose of the study

The study aims at identifying knowledge and practice gaps of nurses when caring for a seriously ill patient. This will help in future planning of in-service continue education programme to improve nurses' knowledge and practice.

What participants is involved

If you are agree to join this study you will be required to fill in the questionnaire.

Confidentiality

All the information collected during the study will be entered in the computer with only a study identification number and no names of participants.

Risk

We do not expect that any harm will happen to you because of joining this study

Right to withdrawal

Taking part of this study is completely your choice. You can withdraw from filling of the questionnaire even if you have already given your consent.

Benefits

No benefits in term of money payment. However your information that you are going to contribute in this study will be beneficial for the development of nursing profession both in nursing practice and education.

Who to contact

If you have questions about this study, you should contact the study principal investigators Dickson A. Mkoka, Muhimbili University of Health and Allied Sciences, P.O Box 65001, Dar es Salaam. If you ever have questions about your

rights as participants, you may call Prof. E. Lyamuya, Chairperson of the University Research and Publications Committee, P.O. BOX 65001, Dar es Salaam. Tel: 2150302-6

Do you agree?

Participant agrees..... Participant does not agree.....

I..... have read the contents in this form. My questions have been answered. I agree to participate in this study.

Signature of participant.....

Signature of researcher

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