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Intensive Care
at Kilimanjaro Christian Medical Centre

-An observation of the nurses’ daily work-

Authors: Lina Hasselgren & Madeleine Telander Bick
ABSTRACT

In the western world intensive care is highly specialised with technical and medical resources as well as educated personnel. In many developing countries however there is a lack of these resources in comparison with western standards. The purpose of this qualitative study was to illuminate the nurses and their work in the care of critically ill patients in the intensive care unit at Kilimanjaro Christian Medical Centre, Moshi, Tanzania. Data was collected during two weeks through participant observations and informal conversations with the nurses employed at three different intensive care units, one medical intensive care unit and two surgical intensive care units. Two main themes and six headlines were identified and are presented in the results, these were: human resources, medical technical resources, material resources, medical resource, possibilities, challenges and obstacles for the nurses working at the ICU. This study showed that there was an obvious lack of the resources mentioned above and that there was a great need of further education for the nurses working in the ICU to strengthen their knowledge, role and profession.

Keywords: Intensive Care, Nurses, Resources, Possibilities, Challenges and obstacles.
SAMMANFATTNING

I västvärlden är intensivvården högspecialiserad med tekniska och medicinska resurser så väl som utbildad personal. I många utvecklingsländer råder dock en brist på resurser i förhållande till den västerländska standarden. Syftet med denna kvalitativa studie var att belysa sjuksköterskorna och deras arbete att ta hand om av kritiskt sjuka patienter på intensivvården på Kilimanjaro Christian Medical Centre, i Moshi, Tanzania. Datainsamlingen ägde rum under två veckor genom deltagande observation samt genom informella konversationer med sjuksköterskorna som var anställda på sjukhusets tre olika intensivvårdsavdelningar, en medicinsk intensivvårdsavdelning och två kirurgiska intensivvårdsavdelningar. Två huvudtema och sex rubriker kom fram och presenteras i resultatet, dessa var: mänskliga resurser, medicinsk-tekniska resurser, materiella resurser, medicinska resurser, möjligheter, svårigheter och hinder för sjuksköterskorna på intensivvårdsavdelningarna. Denna studie visar på en faktisk brist på ovan nämnda resurser samt att det fanns ett stort behov av vidare utbildning för sjuksköterskorna som arbetade inom intensivvården för att öka deras kunskap och stärka deras roll och profession.

Nyckelord: Intensivvård, Sjuksköterskor, Resurser, Möjligheter, Svårigheter och hinder
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1 INTRODUCTION

In Sweden nurses have the privilege to specialize within many fields of nursing; one of them is Intensive Care. As nurses we are specialising to become intensive care nurses, an education that leads to a Diploma in Intensive Care. As a part of these studies we got the opportunity to receive a scholarship from the Swedish International Development Agency (SIDA) to write our master thesis in Tanzania. We chose to study the nurses in their work in the intensive care units at Kilimanjaro Christian Medical Centre, KCMC. This to find out how nursing care is provided when the beforehand studied literature illustrated a lack of resources as well as staff level limitations at the hospitals in developing countries.
2 BACKGROUND

2.1 Intensive Care in the Western world

Intensive care units (ICUs) mostly originate from post-operative care wards or recovery rooms that later grew to interdisciplinary units caring for critically ill patients (Dünser, Baelani & Ganbold, 2006). Intensive Care by definition stands for diagnosing, monitoring, treating and caring for critically ill patients with a potentially reversible failure in one or several organic systems of the body. The intensive care in the western world is highly technical and the care given is highly performed. The goal of intensive care is to optimize a patient’s possibility to regain health and a life that holds quality for the specific patient. A patient that is being transferred to an intensive care unit should have a chance of recovery and the failure organs must be treatable. The work environment at the ICU is both physically and psychologically demanding because of the high burden of critically ill patients, a lack of ICU beds and a lack of educated personnel. A good cooperation between nurses, physicians and physiotherapists and a good leadership is necessary to run an ICU and to treat the patients in the best way possible (Larsson & Rubertsson, 2005).

2.2 Tanzania

Tanzania is situated in East Africa and is one of the poorest countries of the world according to GNP per capita. The population was estimated to be 43 739 000 individuals in 2009. Life expectancy figures from 2006 are 40 years for men and 41 years for women. Infant mortality rates under 5 years per 1000 live births are 50 for male and 51 for females (World Health Organization (WHO), 2009). The population is divided into approximately 120 different ethnic groups called tribes. The main religions are Christianity, Islam and local religions. The official languages are Swahili and English (Juntunen & Nikkonen, 1996).

2.3 Health care in Tanzania
Health care facilities exist all over the country and access more than 80% of the population. There are four consultant specialist hospitals and 17 regional hospitals on the mainland (Cox & Shao, 2007). The rapid growth of the Tanzanian population (population 1967 12.3 millions, 2008 40.7 millions) increases the need for health facilities. The National Health Policy is working hard to meet the health needs of the population. There is a general goal to have one health centre for 50,000 people. There will also be a need for more educated health personnel. The ratio for nurse, doctor, patient in Tanzania is: 38.9 nurses/ 100,000 people, 2.5 physicians/ 100,000 people. The quality of care is improved but there still remain deficiencies such as for example the cost of drugs (which is still unavailable to poor people), health care charges and other unofficial costs. Long distances and inadequate and affordable transport systems make it more difficult for people to seek care (Macha & Ngowi, 2008).

The Tanzanian health care services are largely provided by the government, voluntarily agencies and private companies. It is structured by the government by the Ministry of Health (Hinderaker et al, 2003). According to Work and Health in Southern Africa (WAHSA) there remains obstacles in Tanzania in accessing quality healthcare due to insufficient financing, severe shortage of educated personnel and inadequate facilities, supplies and equipment. Although there have been improvements in the availability of drugs the costs of drugs still makes them unavailable to many people (Macha & Ngowi, 2008).

2.4 Intensive Care in developing countries

There has been a delay of 15-20 years in the development of the intensive care in the least developed countries compared to the industrialized countries. In the least developed countries ICUs are only found in large hospitals of urban or metropolitan areas. This leads to an obvious lack of ICU beds and it is a key factor for high hospital mortality rates in the least developed countries (Dünser et al., 2006). A study from Zambia showed that only 5 out of 68 hospitals reported having an intensive care unit. All of these were referral hospitals except for the University Teaching Hospital in Lusaka (Jochberger et al, 2008).

A substantial part of the medical costs for ICU procedures, drugs and laboratory tests must be covered by the patient; this puts an enormous financial burden on the patient and his or her relatives (Dünser et al., 2006). A study from Burkina Faso discusses that relatives sometimes
refuse to transfer the patient to the ICU because of the high admission charges as well as the costs for purchase of essential drugs and consumables necessary for treatment (Ouédraogo et al., 2002).

Most of the patient care is done by the patients’ family because of the nurse’s extensive medical duties. These circumstances often lead to crowded ICU’s, disorganization and irregularities in documentation and drug therapies. There are also problems with the ICU structure when the basic architectural requirements cannot be met. Frequently power surges and water supply are recurrent problems, hospital in rural areas rarely have automatic emergency power supplies to bridge electrical power surges (Dünser et al., 2006).

A study from Sub-Saharan Africa explains that the practice of intensive care is in an early stage of development. The study highlight the need of affordable, appropriate and sustainable equipment, the need of education of the medical staff and the need of support from the hospital management to develop and run the intensive care units (Towey & Ojara, 2007). Baker (2009) also writes of the need of a development and acquisition of inexpensive and simple equipment rather than complicated equipment to ensure the greatest benefit and that there is a misconception that intensive care has to be complicated and technologically sophisticated. Towey and Ojara (2008) means that it is hard to compare the intensive care settings between the developed world and the developing countries because the diagnostic cases are so different and also because of the lack of support of laboratory results. They mean that the ICU facility can make a major improvement to the care and that the intensive care should be a natural development of all hospitals (ibid).

Average technical and nursing equipment of most ICU’s in the least developed countries range below the standards of the first ICU’s in Europe in the 1950’s. Monitors, ventilators, defibrillators and syringe pumps are rare and almost only present in hospitals that have received donations from Western countries. Invasive surveillance and diagnostic procedures are almost nonexistent. The inadequate medical-technical equipment of most ICU’s substantially contributes to a high mortality rate. Aside from a shortage in vital medications the ICUs also have to deal with low-quality and fake drugs (Dünser et al., 2006).
2.5 Intensive Care Nurses

Critical care nursing (nurses working at the intensive care units) is specialised nursing care of critically ill patients who have manifest or potential disturbances of vital organ functions. Critical care nursing mean assisting, supporting and restoring the patient towards health or easing the pain and preparing the patient for a dignified death. The aim of critical care nursing is to establish a therapeutic relationship with patients and their relatives and to empower the individuals' physical, psychological, sociological and spiritual capabilities by preventive, curative and rehabilitative interventions. The provision of nurses to work in the critical care environment is variable worldwide. Critical care nurses must possess a unique body of knowledge in an order to provide competent care to critically ill patients and their families. This knowledge can be gained through formal education and through experience from the ICU (World Federation of Critical Care Nurses WFCCN, 2007).

The majority of clinicians in charge of ICU’s are anesthesiologists, however in many developing countries anesthesiologists are not graduated physicians but are specially trained nurses or medical assistants. Particularly in smaller hospitals in rural areas, physicians are only sporadically present on the ICU and responsibilities are left to the nursing personnel. This may lead to a lack of understanding about how to comprehensively care for a critically ill patient. Nurses are the main pillars of intensive care in the least developed countries because of their permanent presence in the unit. The educational level is highly variable, since only a minority of nurses working in the ICU has been educated in governmental nursing schools. Many nurses perform tasks that may be beyond their limits of medical capability (Dünser et al., 2006). Mapanga and Mapanga (2000) writes about nurses’ responsibility in the call for them to initiative preparation to attain cost effective nursing practice to provide socially and culturally relevant nursing care.

The workload in the ICU requires more time, effort, dedication and motivation than work on other hospital wards which may lead to burnout syndromes and low motivation of the staff. Well-trained nurses often leave their home countries to work in more developed countries where the work conditions and the salaries are significantly better (Dünser et al., 2006).

2.6 Transcultural nursing
Leininger's theory about transcultural nursing is the only one who explicitly focuses on human care and cultural relationships. The care provided by the nurse and the patients actual needs can differ depending of the culture and by using the etnonursing theory hopefully a link between the care and the culture can be established. A way to customize the caring with the patient's cultural values, beliefs and expectations is necessary to provide the best care possible (Leininger & McFarland, 2002).

The central and dominant goal of transcultural nursing is to provide culturally competent, safe, and well fitted care to people of similar cultures as well as to people of diverse cultures and this knowledge is important to all health care providers worldwide. Knowing and respecting the culture of the patient is essential to be able to provide a good care in any country. An African country is often not homogeneous, but reflects cultural diversities and religion as well as economics, education, technology, politics; languages influence cultural meanings, expressions and patterns in different cultures. A culturally based care is essential for well-being, health or to face handicaps or deaths (Leininger & McFarland, 2002).

Health care personnel need to consider the possibility of their indifference to diverse cultural values and that it could be a barrier to communication, understanding, and mutual acceptance between the health care provider and the recipient of care. Professional nurses need to maintain an open discovery attitude using transcultural nursing theories and concepts to develop creative ways to practice nursing. This can enable the nurse to provide a meaningful care to their patients (Leininger & McFarland, 2002).
3 STATEMENT OF PURPOSE

In the Western world intensive care is highly developed with technical- and medical resources as well as educated personnel. This contributes to a well performed healthcare where patients can be given the best possible treatment available. In developing countries, however, there is a lack of these resources in comparison with our western standards. Do these limitations affect the daily work for the nurses at the ICU?

4 AIM OF THE STUDY

To illuminate the nurses daily work in the ICU at KCMC Hospital, Tanzania.

4.1 Specific aims

How do available resources or lack of resources such as technical apparatus, personnel, and medical drugs affect the daily work at the intensive care unit?

What kind of possibilities, challenges and obstacles do the nurses working at the ICU face in the care of critically ill patients?
5 METHOD

5.1 Design

Naturalistic observations are often made in field settings through a technique called participant observations. A participant observer participates in the functioning of the group or institution under study and strives to observe and record information within the context, experiences, and symbols that are relevant to the participants. Not all unstructured observational studies use participant observation, but most of them do and particularly in the case of ethnographic research (Polit, Beck & Hungler, 2001). The authors chose to use this method because it seemed to be the most suitable choice in this specific setting and to answer the aim of the study.

5.2 Selection of participants

Observation and collection of data took place during two weeks at the medical and surgical intensive care units (MICU and SICU) at KCMC and the nurses in duty during these weeks were the ones observed. The inclusion criteria of the participants were that they would be registered nurses (RN) and English speaking.

Continuously the term nurse will be used in the study’s result and discussion part. The authors do not differ the nurses’ education level in terms of Registered nurse (RN) from RN with a Bachelor or/and Diploma from each other. The Medical Intensive Care unit is referred as MICU and The Surgical Intensive Care unit as SICU, divided in SICU A and SICU B.

Table 1: Observed nurses at the ICUs’
<table>
<thead>
<tr>
<th>Nurse</th>
<th>Education/Title</th>
<th>Years of working/ years at the ICU</th>
</tr>
</thead>
<tbody>
<tr>
<td>1th</td>
<td>R.N. / Head nurse</td>
<td>10/8</td>
</tr>
<tr>
<td>2th</td>
<td>R.N.</td>
<td>10/4</td>
</tr>
<tr>
<td>3th</td>
<td>R.N.</td>
<td>10/1</td>
</tr>
<tr>
<td>4th</td>
<td>R.N.</td>
<td>21/8</td>
</tr>
<tr>
<td>5th</td>
<td>R.N.</td>
<td>15/15</td>
</tr>
<tr>
<td>6th</td>
<td>R.N.</td>
<td>4 months/4 months</td>
</tr>
<tr>
<td>7th</td>
<td>R.N. / Midwife</td>
<td>17/3</td>
</tr>
<tr>
<td>8th</td>
<td>R.N. / Head nurse</td>
<td>8/6</td>
</tr>
<tr>
<td>9th</td>
<td>R.N.</td>
<td>7/7</td>
</tr>
<tr>
<td>10th</td>
<td>R.N. / Head Nurse</td>
<td>8/5</td>
</tr>
<tr>
<td>11th</td>
<td>R.N. / Diploma in Critical Care</td>
<td>20/15</td>
</tr>
<tr>
<td>12th</td>
<td>R.N.</td>
<td>25/10</td>
</tr>
</tbody>
</table>

5.3 Data collections

Leininger has offered a four phase strategy as a possible model for participant observation. In the initial phase, the researcher observes and listens to those under study, allowing observer and participants to become acquainted and to get more comfortable in interacting. In phase two, observation is enhanced by a modest degree of participation. As the researcher participates more actively in the social group, the reactions of people to specific researcher behaviours can be more systematically studied. In phase three, the researcher strives to become a more active participant, learning by the experience of doing rather than just watching and listening. In phase four the researcher reflects on the total process of what transpired (Leininger & McFarland, 2002).

Phase one took place during the orientation day and during the first hours at each ICU. The acquaintance period was rapidly shifted into being part of the team, presumably because the authors were already acquainted with the intensive care environment. In phase two the observations started and the nurses were asked about their working conditions. In phase three participation in the care of the patients started. The nurses were in this phase asked about where
to find medical equipment etcetera and how they handled emergency situations. By doing this, a
good insight in the logistics of the wards and the available medical and technical resources as
well as the nurses' opinions about their possibilities, obstacles and difficulties, were provided to
the authors. Phase four took place outside the hospital soon after each shift where the authors
were reflecting on the logs and wrote field notes.

Because participant observers cannot spend a lifetime in one site and cannot be in more than
one place at a time, observation is usually supplemented with information from unstructured
interviews or conversations. The most common forms of record keeping in participant
observation studies are logs and field notes. A log is a daily record of events and conversations.
Field notes may include the daily log but tend to be much broader, more analytic, and more
interpretive. Observational notes are objective descriptions of events and conversations;
information such as time, place, activity and dialogue are recorded as completely as possible. It
is clearly essential to record observations as quickly as possible, but participant observers
cannot usually record information by openly carrying a clipboard or a tape recorder because this
would undermine their role as an ordinary participant of the group. Observational methods can
be used to gather such information as the characteristics and conditions of individuals; verbal
communications (e.g. exchange of information); nonverbal communications (e.g. facial
expressions); activities and environmental conditions (Polit et al., 2001).

5.4 Data analysis

All analysis work consists of three parts; the decontextualisation where meaning units are
separated from its context; the syntheses which links the meaning units into new units; and the
interpretation to find meaning of the human act. The analysis of qualitative materials generally
begins with a search for themes or recurring regularities. Themes often develop within
categories of data. The search for themes involves not only the discovery of commonalities
across participants but also a search for natural variation. The researcher must attend not only to
what themes arise but also to how they are patterned. The qualitative analyst must be sensitive
to relationships within the data (Pilhammar Andersson, 1996). If more than one researcher is
working on the study, a discussion between the writers can be highly productive (Polit et al.,
2001). A meaning unit is a constellation of words, sentences or paragraphs relating to the same
central meaning. The abstraction includes creation of codes, categories and themes. The
meaning units are put into codes, the codes are put into categories and the categories are put into
sub categories and later into themes. Meaning units, codes and categories can fit into more than one theme and the theme can be either constructed by sub themes or divided into sub themes (Graneheim & Lundman, 2003).

Out of the study’s field notes 45 words or sentences were transpired by reading all observations out loud in the search for meaning units. These meaning units were coded after similarities/commonalities and put into six different categories. After this first categorisation, one group was excluded because it did not match the aim for the study, two of the groups were put in to one due to their similarities and a total of four groups remained. These groups ended up to form two main themes: resources and nurses at the ICU (Appendix 1). Out of these two main themes the authors created six headlines; human resources, medical technical resources, material resources, medical resources, possibilities and challenges/obstacles for the nurses at the ICU, to answer the study’s specific aim.

6 ETHICS

By providing information beforehand about the study to the Dean, the Matron and the main gate keeper at KCMC, an ethical clearance was received for proceeding with the thesis. The Head nurse of each ICU informed the nurses in duty during the authors’ presence at the ward about their role and study. Each observed nurse confirmed orally a will to participate. If any questions appeared from the observed nurses regarding the study the authors provided them with the information needed.

The authors’ presence as soon to be specialist nurses in intensive care may have affected the behavior and integrity of the observed nurses in a way that made them feel a bit undermined or exposed. By trying to avoid this, the authors explained that knowledge would be shared from both parts. The small talk and the open attitude contributed to a friendly atmosphere between the nurses and authors at the ward. Initially the authors experienced a frustration over the fact that they could not provide the patients the care they needed from a western view. Over time acclimatization into the role as observers arose and the setting came into another perspective.

7 INTRODUCTION TO KCMC
KCMC is a counselling and specialist hospital in Moshi in northern Tanzania, serving the entire north-west of the country and also serving referral patients from other parts of Tanzania and East Africa. The hospital was established in 1971 and is an institution of the Good Samaritan Foundation offering curative, teaching and research services. It is the third largest hospital in Tanzania and is owned by the church, managed in partnership with the Tanzanian government (Cox & Shao, 2007).

The hospital area consists of one large three-floor building hospital with surrounding buildings like for example a nursing school, Tumaini University, a church, a library, a conference hall and an administration building. On the ground floor of the hospital building is the emergency/casualty room, offices for doctors and administrative personnel. This is where patients are registered. This floor also consists of pre-natal care and three paediatric wards. The first floor consists of medical wards, medical intensive care unit (MICU), an HIV-clinic, ear-nose-throat, ophthalmology and an x-ray unit. The second floor is the surgical floor where you find the surgical wards, the surgical intensive care units (SICU), operation theatres, urology and orthopedic wards. The third floor consists of gynaecology, obstetrics, the delivery rooms with a separate operation theatre room for c-sections and the post natal ward. All ward employees wear uniforms. The doctors wear their private clothes with a white doctor’s coat and wear badges with a photo and their title; nurses have different dresses in different colours depending on title and level of education.

There are internal telephones in use at the hospital, but no pager system to reach the doctors. Walking between different wards, e.g. the drugstore, the x-ray unit, consulting units is the way for nurses to make contact with others at the hospital. There is no internal hospital transport service available.

The observed patients at MICU were diagnosed with medical conditions such as ketoacidosis, malaria, meningitis, kidney failure, heart failure, fume intoxication and cardiac chocks. Some were also infected with HIV. At SICU the patients were diagnosed with surgical conditions such as shoot wounds, head trauma, post operative complications, burns and traffic accidents. What differed SICU A from SICU B was that SICU A treated patients with “clean” diagnoses and SICU B cared for patients with septic symptoms or at high risk for infections. The patients
at both MICU and SICU were treated at various lengths, from three days up to several weeks or months. Patients at all ages were treated at the wards.

One day at a regular ward at KCMC hospital costs 2500 Tanzanian shilling/day (13 Swedish crowns/day) and you can also choose to pay extra for a more private double room, 10 000 Tanzanian shilling/day (50 Swedish crowns/day). Every examination, x-ray, consultant, operation etcetera adds to the final cost. A few medications are included in the price but most drugs are not and the patient will have to buy it themselves. If a patient for some reason is incapable to pay the hospital bill the hospital will, after much investigation, release the patient free of charge. There are also different health care insurances that some people have to cover hospital expenses.

The layout of the three observed ICU’s are described in Appendix 2

8 RESULT

8.1 Human resources
All of the observed nurses had studied for three or four years and only one of the nurses had received a Diploma in critical care. The observed nurses were either registered nurses or had taken a Bachelor of Nursing, all depending on what school or schools she had had her education at. There are no official demands of previous experience in nursing or specific courses/training in emergency care to work at the ICU at KCMC. The nurse with the least experience had been working at the ICU for four months and had just graduated from nursing school and the nurse with the longest experience had been working at the ICU for 15 years. Two of the nurses had experience from intensive care overseas. The will to learn more about the technical environment and emergency care in general was noticed and expressed from the nurses at all three ICUs.

The patients did not always receive an optimal care due to the lack of skills in emergency medicine. This was observed in cases where patients for example needed oxygen, needed to be monitored or needed iv fluids or life saving drugs and where the outcome of the diagnose and consequences of the nurses actions could have been severe for the patient.

One of the nurses who had studied emergency medicine abroad was teaching the Bachelor of nursing students about different emergency situations and about the equipment used in specific situations. This was the first time they were shown the emergency equipment even though they all had worked for a couple of years as registered nurses. Nurses were allowed to intubate a patient if there was an emergency but since the nurses did not receive any training in the procedure or updated education about the equipment they felt insecure and were not likely to use the resources available. One observed acute situation occurred when a post operative patient arrived to SICU. The patient was nearly moribund, had had a cardiac arrest in the operation theatre, was vomiting blood and needed a ventilator. The ICU nurse who should be in charge of the patient had trouble starting up the ventilator and did not participate in the acute care of the patient. Instead she focused on changing sheets and of paper work and left the patient with the operation theatre staff who had to return to the theatres as soon as possible. This resulted in an unmonitored, instable patient with hypotension and toxic oxygen levels on the ventilator. When asking the nurse about the alarms and settings of the ventilator she could not answer us because no one really knew how the ventilator worked.

Some of the observed nurses could handle the technical equipments whilst others had a lack of technical knowledge. A few misunderstandings about the use and measurements of the machines were observed. For example one nurse mistakenly took the MAP (mean arterial
pressure) for the pulse rate and another nurse thought that the monitor would break down when turning the machine on without having it connected to a patient.

When asking about how long the ventilator would be at the toxic level of 100% oxygen, three different personnel (two nurses and one doctor) responded:

"The saturation is 97% which is good so why should we lower the oxygen?"

Once a week there was a meeting for nurses at the boarding room. Lectures about different nursing topics were held by nurses from different wards and patient cases were drawn. Apart from that there was an hour long lecture in the conference hall at the hospital ones a week, where different lecturers were invited to talk about their work or research. These meetings were mostly visited by the doctors and head nurses although all staff was welcomed.

8.2 Medical technical resources

The three ICU units differed from each other when talking about their technical resources. The things they had in common were that they shared equipment between patients due to the lack of functioning monitors, suction machines and blood pressure cuffs etcetera. For example one patient was connected to the oxygen saturation probe whilst the patient in the bed beside was connected to the blood pressure cuff. All medical technical machines were donations from the Western world and no manuals of the machines were seen during our period of observation. One of the nurses wished that they would be able to buy new machines and equipment instead of struggling with the old ones donated from the Western world. Another nurse claimed:

"I like to work here but we do not have enough technical equipment, we should at least have two available ventilators at MICU"

There was varied information about the hospitals total supply of medical technical equipment, for example the Head nurse at the first ICU told claimed that there were four ventilators available, the second Head nurse said that there were two ventilators in function, while the third Head nurse said that there was only one ventilator working. When asking her about how they prioritise when there is more than one patient in need of a ventilator she said:
"We pray to God for help"

The same nurse explained that a patient was only put on the ventilator if she/he had a very good prognosis in surviving. There were according to her two more ventilators in the operating theatre that could be used, but in such cases operations had to be cancelled. The nurses had been written to the hospital board regarding the need of more and new medical technical equipments.

The shortage of ventilators and monitors as well as the poor function of some apparatus lead to un-treated patients or to a delayed treatment which affected the outcome of the diagnoses. The sharing of equipment and the lack of patient bounded equipment means an increased infection risk for the patient and thereby prolonged hospitals stay.

All the ICUs’ were equipped similarly with a suction machine, crash trolley, defibrillator, axillary thermometers, oxygen cylinders and hand ventilators. Vacuum/oxygen suppliers built in the wall beside the beds had been out of order for years. Monitors as well as other equipment differed between the 3 wards as follows:

<table>
<thead>
<tr>
<th>Equipment</th>
<th>MICU</th>
<th>SICU A</th>
<th>SICU B</th>
</tr>
</thead>
</table>

Table 2. Medical-technical equipment at the three different ICUs.
<table>
<thead>
<tr>
<th>Monitors at the ward/in function</th>
<th>6/3</th>
<th>5/3</th>
<th>3/1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ventilators</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Portable oxygen saturation monitors</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Syringe pumps</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Manual Blood pressure cuffs</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Incubator</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Metal cages for burn victims</td>
<td>0</td>
<td>0</td>
<td>2</td>
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All of the Head nurses explained their difficulties in the care of the critical ill patients when they had no possibilities to monitor the patients regularly due to the lack of monitors and other medical technical equipments.

“We are losing some patients because we have the wrong material and few possibilities to monitoring the patients”

8.3 Material resources

All ICU’s were equipped similarly with material resources for basic needs. Venous cannulas existed in different sizes, were administered by the nurses and were the only way to gain an intravenous access to provide intravenous medicine and fluids, no central lines were inserted or available. Blood sample bottles existed in different variations. Blood samples were drawn using a 5 ml syringe with a sub cutaneous needle. Naso gastric tubes, urine catheters and urine bags were commonly used in the patients. Fluid stands were available but seldom used; intravenous fluids were instead hung up on a hook from the ceiling. Syringes existed in the sizes of 5, 10 and 50 ml.

Material to measure the blood glucose level was available but sometimes the hospital store room ran out of them, and one of the nurses said:
"sometimes you have to administrate insulin even though you cannot measure the blood glucose level but sense that it might be high "

There was one type of wound dressing material. Two metal bowls, haemostats and some cotton and compresses were packed in to a cotton cloth in the hospitals sterilization unit. Wounds were cleaned using saline 0.9 % and Povidone (Iodine).

Cardex and journals of each patient were handwritten and updated each shift by the nurses. The journals were kept in front of the bed and were marked with the patients’ name and the hospital number. The papers in the journals were not always stuck together and on some occasions papers were found in journals they did not belong to. Drugs were written on a separate medical record in the patient’s journal. The patient did not wear any identification tag or any other kind of identification. There were no specific documents regarding specific treatments, nursing care etcetera available at the ICUs.

The patient beds were old donations from western hospitals and most of them only had soft mattresses with no protection from moist. The bedding consisted of sheets and blankets and in rare cases pillows with pillowcases. The beds could manually be raised in the head-end but most often there were no possibility to lower and raise the whole bed up and down. When the wards had exceeded its bed capacity patients were provided a camp bed. These beds were commonly used at the other wards but seldom in the ICU. There was a shortage of sheets at the hospital and since the laundry is hung out to dry in the open air there was a severe shortage on rainy days. Paper nappies or disposable bed clothes were rarely used.

There were one sink at each ward with a bar of soap as the only option to wash your hands, no hand sanitizers were available. The nurses used gloves and aprons in a fabric material in their work with patients. The nurses occasionally used masks in work with patients on for example dialysis and there were sterile gloves available on the ward. In the small sluice room urine buckets were placed at a shelf, rinsed with water after each use. There was no soap or sterilizer available in there. The patients were washed once daily and had to bring their own washing cloths and soap, the hospital had very limited resources of these products. Patients’ mouths and teeth were cleaned occasionally with saline 0.9 %, no toothbrushes were available.
The patients who could not or were not allowed to eat were given nutrition via their naso gastric tubes consisting of chai (sweetened tea with milk) and water which was the only nutrition provided by the hospital. Relatives provided patients that ate, food like meat, beans and rice but most of the patients was provided chai and mtori (banana stew). Unconscious patients could be hospitalized for weeks with chai as the only nutrition and no extra vitamins or aminoacids were provided.

8.4 Medical Resources

There were some drugs kept at the ward, per oral medications were kept on a tray that contained the most basic drugs. Antibiotics, vasoactive drugs, diuretics and some other emergency drugs were available. All drugs available at the ward were free for the patient but if a doctor prescribed anything else the patient had to pay for it.

The hospital had its own pharmacy and drugs were ordered to the wards daily. Drugs were prescribed by the doctor at the ward and if the drug was available at the hospital pharmacy it was picked up there, otherwise relatives had to go to another pharmacy to pick it up. An example of a situation that could have been life threatening was when a patient was in need of the inotrop drug Dobutamine due to a cardiac shock. The hospital pharmacy did not store Dobutamine and the drug had to be provided by the relatives from another city.

The nurses were allowed to provide a few drugs without asking the doctor for a prescription like for example mild analgesics, intravenous fluids and insulin. Some of the patients seemed to be in pain but were seldom provided anything extra except from the analgesics already prescribed in the medical record. The nurses did not use any pain assessment scale to measure pain and no follow up after given analgesics were done.

The intravenous fluids that were available at the ICU were; 5% glucose, ringer lactate, saline 0.9%, a mix of 5% glucose and saline 0.9% and Mannitol, all provided in 250 ml bottles. Even though these fluids were available patients who needed them did not receive them regularly. The fluid balance often showed an unwanted negative outcome and was not compensated with fluids. Some intravenous fluids (e.g. Saline 0.9%) were produced at the
hospital pharmacy and tapped into glass bottles which were resterilized. No total parenteral nutrition (TPN) was available at the hospital.

8.5 Possibilities for the nurses at ICU

Because of the shortage of medical technical resources the nurses were forced to really look at the patients to discover clinical signs which gave them a good overview of the patients. There seemed to be a good environment and a good cooperation between the nurses which contributed to a good teamwork with the nurses helping each other when the work load was heavy. The fact that all of the three ICUs were built as large rooms made it easier for the nursing staff to get a good overview of the patients and what was going on. The nurses were the ones always available at the ward and therefore they were able to get a really good picture of the different diagnoses.

Tanzanian nursing students as well as international nursing students contributed to a good learning environment where the nurses got different ideas and the latest updates on nursing topics. During the observation the Tanzanian nursing students documented nursing diagnoses in the patients' journals as a part of a school assignment. This way of documenting the nursing care was new for the nurses at the ward. The Tanzanian nursing students also had clinical examinations bedside where their teacher asked them questions and taught them the most basic things to examine in a patient with focus on the nursing care. Examples of this were the importance of measuring pain, nutrition and fluid balance.

8.6 Challenges/obstacles for the nurses at the ICU

The lack of equipments that nurses in developed countries takes for granted, for example a tablet crusher, clean unbroken masks, suction tubes, spare parts for different material connections etcetera, was expressed by the nurses at KCMC as quite challenging. One of the nurses concluded that she constantly had to improvise in her daily work because of the lack of equipment. One example was the way the nurses handled medicine where they put the tablets in a piece of paper and crushed them by rolling a bottle over it. Another observed improvisation was the way oxygen was administered to intubated patients where the nurses cut a hole in the middle of a plastic hose and connected it to the tube using plastic tape. Oxygen was
administered one way and the exhaled air went out the other way. When the single available blood pressure cuff at the ward was too large for a patient the nurses held it together with tape to prevent it from bursting resulting in a blood pressure that was not realistic or reliable. One of the nurses claimed:

"If you walked in here, would you believe this were an intensive care unit? There are no monitors and apparatus, you constantly have to improvise".

Another challenge for the nurses was that because of the shortage of material and the lack of space they did not have fixed places where they kept certain material. Instead they put a lot of their equipment together in large boxes which made it hard to find the desired one fast. In an emergency situation this delayed the rescue work. One of the patients needed an oxygen mask and the nurse had to look for one for a very long time until she could change the oxygen cannula to the mask.

There were limited possibilities for the nurses to develop their knowledge within the field of work and many of the nurses expressed a wish to get an education in emergency care. One of the nurses claimed:

"There should be at least three nurses with a Diploma in Intensive Care here to raise the competence at the ward".

When applying for a job as a nurse at KCMC, you do not apply to the ward you wish to work at. The head department of the hospital decides if and where the nurse is placed to work, all depending on where there is a current lack of personnel. This means that a newly graduated nurse can be placed at the ICU directly from school without any experience from nursing care in general and emergency care in particular. Without experience and further education in critical care, the working environment at an intensive care unit is challenging and the care given to the patient may not be optimal.

Because of the infrastructure of the hospital the nurses quite often had to leave the ward to get medicine from the pharmacy, to leave blood samples to the laboratory, to follow the patients to the x-ray, to leave a referral to other departments’ etcetera. This means that the patients may be
left alone on the ward with only one nurse or in worst case with the nursing assistants. The safety of the patient care is thereby limited and time is taken away from the patient care. There are no guidelines, manuals or routines of different diagnoses or of the medical technical equipment available at the wards which could help the nurse in her daily work. This limits the nurses to develop skills in specific areas and to learn about the technique that is available.

9 DISCUSSION

9.1 Method Discussion

9.1.1 Study limitations

The short observation period only gave a glimpse of the nurses’ work at the intensive care units hence we could not reach any depth in any particular situation but the observations are more an overview of the wards observed. As Swedish nurses, educated in Sweden with practice of intensive care only in Sweden, our prejudice may have affected our views although we have tried to be as unbiased as possible. The official language of the hospital is English and all observed nurses spoke good English but the small talk with patients’ and between nurses often occurred in Swahili and neither the authors nor the nurses had English as a mother tongue, which could have been a limit in the study. As white nurses from another culture the blending was not completely and therefore the naturalness of our presence was low.

9.1.2 Advantages of the study

An increased knowledge was gained by continuously carry out informal conversations with the observed nurses in their daily work. The participant role also gave an opportunity to meet with other hospital staff such as doctors and nursing assistants which enhanced the observations of the work at the ICUs. Through the unstructured participant observation period the approach was flexible and as already registered nurses the participation in the daily work became easy. The observed nurses welcomed us as colleagues rather than students or observers which made us more comfortable in interacting with the group. The observational method itself was easily adapted and gave the authors a rich understanding about the daily work at the three different ICUs.
9.2 Result Discussion

9.2.1 Human resources

The nurses expressed a frustration over the lack of equipment and education but in the same way they seemed very happy about working at the ICU, they gave the patients a good care, talked to and listened to the patients and spent time with the patients. The good nursing care was shown in several ways where the nurses took the time they needed to care for the patients’ daily hygiene and their psychological wellbeing where they gave support and comfort. According to the Matron at the hospital it was hard to employ nurses at KCMC because the workload is heavy, and many newly graduated nurses are being employed abroad where they get more salary and better working conditions.

The working conditions of the three visited ICU’s at KCMC could be improved if there were enough educated personnel. The lack of educated nurses is frequently mentioned in the literature. Williams et al. (2001) found that the two most important issues facing critical care nurses are staffing levels followed by working conditions (ibid). A study from Ilembula Lutheran Hospital, Tanzania claimed already 15 years ago that one of the most important objectives of the health policies was to increase and improve the training of health personnel (Jantunen & Nikkonen, 1996). Scribante and Bhagwanjee (2008) states that the levels of staffing should be appropriate to the severity of illness, the mix of patients and level of interaction (ibid). At SICU B there were only 12 nurses employed to cover all the shifts, how this level of staff could cover maternal leaves, sicknesses or vacations was not clear.

There is currently no possibility to receive a Diploma in Intensive Care in Tanzania and the observed nurses were not given any in-house education in the subject. The currently existing in-house education was a great possibility to share ideas of nursing topics although a bit too basic for a nurse working in an intensive care unit where the demands of the care given are higher. The education might benefit from combining theoretical lectures with practical training in for example handling equipment. This would let the nurses feel more secure in their profession at the ICU. Bell (2008) writes that education seems to be one of the most important aspects to improve nursing care towards patients. Nurses at Haydom Lutheran Hospital, Tanzania, also
expressed a desire to extend their qualifications but the hospital could not afford to let the nurses leave the hospital to study (ibid).

Nurses working in the critical care environment vary worldwide regarding their educational level. There is a ranging from undergraduate cadetship-style apprentice preparation to post-registration in-house orientation and training on the job through to postgraduate university based programs leading to higher academic degrees (Williams, Schmollgruber & Alberto, 2006). Although a variety of short courses in critical care is available, which provides an important role in providing knowledge in the subject (McGaughey, 2004) the need of specially trained nurses in postgraduate programs would contribute to a balance of theoretical content and clinical practice (Asiain, 2005). In another African country, Zimbabwe, there has been a development of the nursing educational programs where the aim is to prepare and educate nurses to enhance the quality of nursing care to meet the society’s demand of the care given. The nurses must be able to raise their knowledge and skills through levels of educational preparation to meet the increased complex health care (Mapanga & Mapanga, 2000).

A sub-Saharan study shows that the education and training of health workers is not sufficiently relevant or oriented to the populations health needs. Large resources are being allocated by the African governments to the health sector to address specific health problems but there is also an urgent need to develop and approach the multiple issues impacting the health force. There is a goal to develop a framework for a global re-thinking of human resources for health workers and this should start with an evaluation of the education and training programs of health workers followed by a revision of the programs (Habte, Dussault & Dovlo, 2004).

Courses should be designed and developed under the assistance of local leadership to ensure sustainability within the context of a severely under-resourced community, such as Tanzania. The education given has to be taught within the limitations of this context to best improve the knowledge of the students (Bergman et al., 2008).

9.2.2 Medical Technical Resources

At the three different ICUs observed there were an obvious lack of medical technical resources from a Western point of view and also a lack of knowledge how to handle the equipment available. During the observation period many questions and misunderstandings about the
available equipment occurred. The nurses claimed that they needed either new equipment with manuals or a good education of the equipment that already exists from someone who can answer for the apparatus. To prevent both nurses and patients from being exposed to unnecessary injury and to support a safe environment at the ICU, different systems and safety procedures are needed (Oh, 2003). One of these includes the training of staff in the appropriate use, care and maintenance of the medical technical equipment available at the ICU to insure it is appropriately applied to the patients. Aside from minimizing the potential harm for the nursing staff it is also important to prevent work absence, resignation or redundancy of the available nursing workforce (ibid).

The system where equipment was shared between patients and between different wards made the work environment heavy for the nurses and puts the patients at risk. It is physically heavy for the nurses when they have to move around equipment and it is also time consuming, especially in emergency situations. The risk of infections for the patients increases when there is no antiseptics available for cleaning the material between the uses. Eriksen, Chugulu, Kondo and Lingaas (2003) highlight the importance of identifying patient-related risk factors for developing infections at the hospital, in order to target high-risk patients.

The nurses explained a will to receive more material to the hospital and to be taught how the existing material was functioning but although some of the monitors were working and the nurses seemed to know how to handle the machine they did not use it frequently, not even on patients who were severely ill and really needed to be monitored. There was no possibility to analyze a blood gas at the hospital and the monitorizing only occurred when vital signs were taken every fourth hour. The monitorizing consisted of measuring blood pressure and saturation, no pulse curve, ECG curve, ICP or breathing pattern were measured. Mavalankar (2004) writes that nurses in developing countries are not familiar with the basic concepts of equipment management and that there is little attention given to this area resulting in wasted resources in terms of unused and unusable equipment. They emphasize that the staffs skills should match the available equipment (ibid). Bell (2008) along with Faponle and Erhabor (2002) means that to improve patients’ care by introducing medical-technical equipment, the staff has to be trained in the use of the equipment. Medical-technical equipment are often donations from the Western world but the nursing staff are only shown how to operate it but seldom taught about the limits or the technical function of the apparatus (Bell, 2008).
in the end lead to a miss-use of the machines and to patients not being monitored properly (ibid).

### 9.2.3 Material Resources

All three ICUs were well equipped with the most basic materials such as cannulas, catheters, tubes and gloves. Bell (2008) experienced a different setting where there was a lack of basic material such as dressing or injection equipment. Nurses often had to search for equipment such as syringes, needles, compresses and intravenous cannulas and the nurses could not change equipment after a single use because of the small amount available (ibid).

The documentation of nursing diagnoses was scarce and only used by the nursing students we met. There were no available documents to describe specific care plans etcetera and the information that was documented was often repeated from one paper to another and orally between nurses at each shift change. The fact that the basic care was not documented led to a low follow up on patients’ improvement or worsening of the condition between the shifts. Juntunen and Nikkonen (1996) write from an experience in Tanzania that records by nurses were not documented precisely. Although the nurses in their study knew it was important to keep a record but they did not know why it was important (ibid). Sulmasy, Dwyer and Marx (1996) claims on the other hand that a judgment of care should not be based on an assessment of the quality of documentation because the care concerns of patients could still be accurate presented although just poorly documented. However another study claims that a lack of documentation could reduce the information available for decision making (Kirchhoff, Anumandla, Foth, Lues & Gilbertson-White, 2004).

### 9.2.4 Medical Resources

The hospitals pharmaceutical system was fragile since the patients sometimes had to wait for days for a drug if the hospitals pharmacy had run out of the drug. A previous study from KCMC explains the use of antibiotics which was provided to the patients without any written guidelines and what type of antibiotics subscribed depended upon what was available at the moment
(Eriksen et al., 2003). In the recent decades there has been a development of the entry of pharmaceutical products, manufactured by the Western world, into the developing world. These drugs are produced in and have their base in a small number of firms and countries and are exported to the developing countries where, because of their high cost, they are a major drain of the finances of the developing countries (Helman, 2000). The WHO (1997) has developed a 'Model List of Essential Drugs' which is regularly updated and includes the most basic drugs that should be available to any population. Further the WHO has established 'The Action Programme of Essential Drugs' to help member countries develop national drug policies. The aim for this programme was to ensure regular supplies of affordable drugs of good quality, to reduce the price of the drugs and to achieve a more national use of drugs (ibid). There has been oppositions of this programme from the local population (who believe that the Western imported medicine would offer greater healing than the national) and from the pharmaceutical industry (Helman, 2000).

A few basic drugs were available for the patients at the wards but there was not a big variety to choose from. The nurses were limited to administrate the drug prescribed by the doctor in the medical record and had little opportunity to decide herself how much she would provide to a patient in for example severe pain. In Botswana patients had persisted pain despite treatment because of the use of only mild analgesics (Sepulveda et al., 2003). A main obstacle is the insufficient availability of opioid drugs because of regulatory and pricing obstacles, ignorance, and false beliefs of the effects of the drug (ibid).

The assessment of the patients' need for comfort medications, like sedatives and analgesics that are often used at the intensive care in the Western world did not exist. Kirchhoff et al. (2004) suggests in their study the development of documentation forms customized for certain situations, e.g. in critically ill patients in need for comfort medication to help care providers to better document and provide care.

Fluid balance was calculated and documented but not entirely properly or correct according to our Western way. For example perspiration and a high body temperature were not considered and an unwanted negative balance were not adjusted or put into discussion at the ward rounds. Intravenous fluids were available but not administrated as frequently as necessary. Patients were administered chai and water but apart from this seldom any other fluid or nutrition. Kreymann,
Adolph, Druml and Jauch (2009) writes that critically ill patients should be nourished parentally with a mixture of amino acids, carbohydrates and fat as well as electrolytes and micro nutrients from the beginning of intensive care if the patients are believed to be unnourished orally for more than five to seven days. Okafor (2009) writes that parental nutrition was a standard practice in Nigeria two decades ago but that it is rarely used nowadays due to economical factors.

9.2.5 Possibilities for the nurse at the ICU

There was a good learning environment at the wards where the nurses were influenced by nursing students and international visitors and were starting to develop/ implement nursing diagnoses. One of the teachers from the Faculty of Nursing provided the Bachelor students with ideas and clinical advice bedside regarding the nursing care that was very profound and up to date with our Western standards. The nurses at the ward would benefit from participating in those sessions. Fichardt and Viljoen (2000) write about the advantage of this when registered nurses could build upon students’ knowledge and skills to identify their learning needs in order to share their knowledge.

There seemed to be a good cooperation between the nurses at the ICUs where the nurses were helping each other when the work load was heavy. Nursing care at KCMC seems to differ a bit from the nursing care described at Haydom Lutheran Hospital (HLH), Tanzania. Nurses at KCMC worked closer together and helping each other in their daily work, whilst the nurses at HLH was more linked to a nursing culture where everyone is taught to manage on their own (Bell, 2008). Although in cases where a nurse failed to perform her work properly, a more experienced nurse would commonly step in and care for the patient (ibid).

The nurses seemed receptive to gain new knowledge and to develop their nursing skills and them also seemed proud of working as nurses. Moland (2002) writes about the nurses in the Tanzanian society and claims that a nurse represents both medical knowledge and modern life which gives them status in the Tanzanian society. The status leads to both professional and social authority and he means that it is the nurses themselves who have to change the impact on health care politics as well as the nursing role to improve the nursing care for patients (ibid).
Because of the nurses constant presence at the ICU they got a good overview of the patients at the ward and had developed good skills in some specific procedures. Bell (2008) writes about the nurses in her study and that their practical competence facilitated a true focus on the patients because they had been forced to develop good skills in practical procedure performances. Beckman, Baldwin and Durie (1998) means that monitoring equipment cannot be a substitute for experienced and skilled direct patient care provided bedside by the critical care nurses and that the nurses develops good skills by their presence at the ICU.

9.2.6 Challenges/obstacles for the nurse at the ICU

The nurses at KCMC left the ICU several times per day to run errands at the hospital, collecting medication, follow patients to another ward etcetera. As a consequence of that the other nurse working that shift could be left alone for a period of time at the ward and time was taken away from the patient care but more importantly, one nurse alone at the ICU is not optimal when caring for several patients in critical conditions. Another safety dilemma concerns the medical records which could be found in different places outside the journal and sometimes even in another patient’s journal. This in combination with no identification tags on the patient could lead to confusion or mix-up of patients and in the worst case that a patient could be administrated the wrong medicine.

The lack of material resources such as for example modern beds and other material equipment sometimes made the daily work for the nurses challenging, and they had to improvise which may not always be beneficial to the patient. Bell (2008) also experienced how the nurses’ creativity was searching for practical solutions when equipment was not available. This included re-use of equipment meant for one time use. To improve the care of the patients and to save the nurses from physically hard work, new material, such as modern beds and other patient bounded material, are needed (ibid). On the other hand, Habte et al. (2004) means that the major limiting factor is not always the lack of resources or health technologies but the lack of implementation capacity which depends on the presence of a functional health system.

Newly examinee nurses were allowed to work at the ICU without any previous experience from working with patients. By working in an environment with critically ill patients, where you are
not able to compare or relate to previous experience, the nurse might find the task hard. Without any debriefing, consultations, meeting etcetera the nurse has to cope with the situation by her/himself or together with peers. Moral distress is a serious problem facing nurses working at the ICU if they do not get enough education, an adequate practice environment or emotional and instrumental support (Hansen, Goodell, DeHaven & Smith, 2009). Such distress can lead to burnout, job dissatisfaction and/or leaving the work (ibid). Kohi and Horrocks, (1994) also writes about the need of a supportive working environment in order to provide quality care to patients. The nurses in their study felt the need of support even though most of them had been in the nursing profession for more than 10 years (ibid).

Nurses at KCMC can be placed to work in the ICU due to a current lack of personnel there. A nurse that has not chosen to work in an environment with critically ill patients might feel unmotivated to perform at her best and insecurity about how to react in emergency situations. Habte et al. (2004) write that a healthy motivation, competency and resource availability of health workers is essential for a good performance of the health care. The motivational part depends on individual, organizational and a broad societal level and when there is a lack of opportunity for training and career development, poor infrastructure and facilities and an unhealthy political and societal environment the loss of motivation impair the nurses’ productivity. Poor personnel administration further leads to the loss of motivation (ibid).

9.3 Conclusion

This study showed that although there was a lack of resources (human, medical-technical, material and medical), nursing care was well performed and the nurses had, because of the limits of resources and other challenges, developed practical skills in the care of the patients. However, there is a need of further education within the area of intensive care.

9.4 Further research

There is a need of studies regarding emergency care as well as studies to improve, and implement, nursing diagnoses such as fluid balance, pain assessment scales, wound care, and nutrition in order to develop the nurses’ daily work in the intensive care environment. This
would benefit the nurses’ knowledge, role and profession at the hospital, as well as the patients’ wellbeing.

10 REFERENCES


**APPENDIX 1**

Method table of data analysis

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<th>Meaning unit</th>
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<th>Remaining Category</th>
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APPENDIX 2

Medical Intensive Care Unit (MICU) and
Surgical Intensive Care Unit (SICU)

The layout of the MICU
The MICU is an open ward with a capacity of 6 patients, a number which can be exceeded. The ward consists of one large room with 6 beds, a sluice room with a toilet and sink and a small room used as a locker/dressing room for personnel. The beds are put close together and can be separated with curtains. The ward does neither separate male from female patients, or adults from children. There is no separate nurse office but the room is divided into one part where the beds and patients are placed and one part where there is an office table and cabinets containing medicine and other medical equipments. Beside every bed is a small table where the patient keeps personal belongings, hygienic products and where the patient’s relatives can leave food and drinks for the patient.

The floors are made of grey cement, the walls are painted white and the ceiling is white with lamps that are broken in one way or the other. Windows are often open and therefore a visit from birds and other flying creatures is common at the ward.

The layout of SICU A
The SICU A is an open ward with a capacity of 7 patients with “clean” surgical cases. The ward consists of one large room with seven beds placed against two of the walls, a nursing desk, a sluice room with a desinfector machine and shelves were they have bowls, buckets and trays marked for each specific use, a patient toilet with a wash bin outside, a wash bin where the staff washes their hands and lockers where medicine and medical equipments are kept. There is a separate room where relatives can have a glimpse of the patients and ask questions and receive information. Parents are allowed to stay with their children. Outside the ward was another separate room with some cabinets where they keep some equipment and serves as a resting area for the staff. The SICU A is divided by a corridor from the main operation theatre. Open windows. The ward does not separate male from female patients, or adults from children.

The layout of SICU B
The SICU B is an open ward with a capacity of seven patients with septic/infectious surgical cases. The ward consists of one large room with seven beds placed against two of the walls, a nursing desk, a sluice room with a desinfector machine (in order?) and some shelves where they have bowls, buckets and trays marked for each specific use, a sink where the staff washes their hands and another sink where cups were cleaned. There was also a patient toilet. There were cabinets were medicine and medical equipment was stored. Right outside was a small room used as a dressing room/tearoom. Windows were open but with safety nets to avoid bird from flying in. Visitors were allowed at certain visiting hours, parents were allowed to stay with their children 24 hours a day. The ward did not separate male from female patients, or adults from children.

After each shift there is a handover of information from one duty to the next. These reports were both verbal, where the nurses give the report bedside on every patient, and written in a rough book containing reports of the admitted patients and their status. Both the verbal and written report is in English since the official language of the hospital is English, although the staff and patients most commonly talks in Swahili. The report contained name, diagnosis, drugs, vital signs and plans. No nursing diagnoses were written down by the nurse hence the patient reports provided little information about nursing activities and observations.

Even though the authors did not spend a long period of time at the three wards some culturally differences were noticed. For example the use of the Swahili word “pole” which was used more frequently than the English version “I am sorry” and seemed to have a more wide and profound meaning to the patients. Another observed cultural difference is the religious part, where the nurses starts the day with prayers and the uses expressions like “Jesus saves us” or “we pray to God for help”