

**QUALITY OF NURSING CARE OF CHILDREN AGED 0- 5 YEARS WITH
ACUTE TREATABLE AND PREVENTABLE MEDICAL CONDITIONS
ADMITTED AT KENYATTA NATIONAL HOSPITAL**

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**A DISSERTATION PRESENTED TO THE UNIVERSITY OF NAIROBI FOR
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE IN NURSING (PAEDIATRICS)**

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DECLARATION

This thesis is my original work and has not been submitted in this or any other university for a degree or any other award.

Signed.....*Blendo*..... Date...*17/10/06*.....

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DEDICATION

This work has been dedicated to my children Japheth Araka and Emmanuel Nyamweya,
and to my husband: Micah Makworo

QUOTE

“UNLESS YOU CHANGE AND BECOME LIKE LITTLE CHILDREN, YOU WILL NEVER ENTER THE KINGDOM OF HEAVEN. WHOEVER HUMBLER HIMSELF LIKE A CHILD IS THE GREATEST IN THE KINGDOM OF HEAVEN”

MATHEW 18: 3-4

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LIST OF ABBREVIATIONS

CBS:	Central Bureau of Statistics
BScN:	Bachelor of Science Nurse
CDD:	Control of Diarrhea Diseases
IMCI:	Integrated Management of Childhood Illnesses
ICN:	Intensive Care Nursing
IPNO:	Inpatient number
KDHS:	Kenya Demographic Health Survey
KECHN:	Kenya Enrolled Community Health Nurse
KNH:	Kenyatta National Hospital
KRCHN:	Kenya Registered Community Health Nurse
MOH:	Ministry of Health
NCK:	Nursing Council of Kenya
PMTCT:	Prevention of Mother to Child Transmission of HIV
WHO:	World Health Organisation
UoN:	University of Nairobi
USA:	United States of America

OPERATIONAL DEFINITIONS

Quality: Distinguishing characteristics that determine the value, rank or degree of excellence or expectation

Nursing Care: the health services offered to patients/guardians by trained nurses in a hospital ward setting.

Quality of Nursing Care: Provision of all the important aspects of paediatric nursing care whereby the nurse carries out all the necessary procedures in the right way to the right patient and at the right time.

Preventable and treatable medical conditions: Those disease conditions whose occurrence can be avoided or treated by observing laid down policy guidelines like immunization, observance of hygiene and intake of a well balanced diet and following guidelines for management of specific conditions like malaria, respiratory tract infections, measles, meningitis, gastro-enteritis and malnutrition.

Patient: A child aged 0-5 years admitted to the ward with an acute preventable and treatable medical condition.

Guardian: The person staying with the child with the preventable condition in the ward.

Structure: Refers to the number and category of nursing staff, patient characteristics and availability of supplies

Process: Refers to all the interventions and interactions between patients and the nurse.

Outcome: Refers to the end product of nursing interventions.

Wholly compensatory nursing: The nurse uses her technical knowledge and skills to provide care to a critically sick child. There is interaction between the nurse and the sick child.

Partially compensatory nursing: The nurse works in collaboration with the child's parent/guardian in providing care to the child. The nurse takes the lead in coordinating all the activities and ensures that she has given all the necessary information to the guardian to have continuity of care at home upon discharge.

Self care: The child's parent using her own knowledge and skills is able to provide the necessary care to her sick child without consulting the nurse.

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SUMMARY

This was a descriptive cross-sectional study carried out at Kenyatta National Hospital (KNH) to determine the quality of nursing care given to children aged 0-5 years admitted with acute treatable and preventable medical conditions. A total of 256 parents/guardians staying with the selected children, 78 nurses and 4 nurse in- charges were recruited into the study.

The survey established that the majority (85.5%) of the children were aged less than two years and at least 80% of them were from Nairobi Province. Most (59.4%) of the children were males and 73% were of the first and second birth order. For the majority (73%) of the children, this was the first admission.

The prevalence of the acute treatable and preventable medical conditions was 88.6% over one month period. The leading cause of admission for most of the children was pneumonia (31.6%) followed by malnutrition (16.8%) and gastro-enteritis (16%). Other conditions included neonatal sepsis (9.1%), measles (6%) and malaria (4.8%)

The parents'/guardians' mean and median age was 26 years and the majority (89.8%) of them were mothers. A great proportion (46.5%) of the parents/ guardians had attained at least some primary education. Most (80.5%) of the parents/guardians were married.

Parents/ guardians were found to lack knowledge about their children's health problems and the drugs they were using. This was regardless of the parent's/guardians level of education and the frequency of admission of the child.

It was established that the paediatric medical wards are mainly run by certificate level trained nurses who constituted 62.8% of the nurses. The majority (69.2%) of the nurses had attended various continuing medical education sessions but none had undertaken any special training in paediatric nursing.

A great proportion (74.4%) of the nurses acknowledged that they involved parents/guardians while providing nursing care to the children. The mode of involvement entailed the nurses instructing the parents/guardians on what they should do but not planning with them.

Drug administration was established as one of the procedures that almost all nurses carried out on a daily basis. However, the procedure for administration of oral medications was not adhered to by all the nurses observed. Other daily procedures mentioned invariably included nutritional care (50%), hygiene (50%), taking of vital observations (46.4%), comfort caring (44%), health education (36%) and infection control (2.5%).

It was concluded that the preventable and treatable medical conditions are the leading causes of hospital admissions. The quality of nursing care is sub-optimal as depicted by low nurse- parent/guardian interaction, minimal performance of the expected daily nursing procedures and non-adherence to the laid down procedures for the administration

of oral medications. On comparing the different levels of nursing training no significant relationship was found between the nurse's level of training and the quality of nursing care they offered. Factors contributing to the poor quality of nursing care included: high nurse-patient ratio (1:30 on average), lack of specialized training or refresher courses on paediatric nursing, lack of standards of paediatric nursing care and laxity of nurses on following laid down procedures.

It was recommended that emphasis be laid on the application of the IMCI strategy while nursing these children, standards of paediatric nursing care be developed and the nurses working in the paediatric wards be trained in paediatric nursing. It was also recommended that more nurses be recruited to meet the stipulated nurse-patient ratio of 1:6 and emphasis be laid on nurses to follow laid down procedures. On further research, it was recommended that a study be done to establish the level of utilization of the other health facilities in Nairobi and another study to compare the quality of nursing care offered by paediatric trained nurses and those not trained.

Chapter One

INTRODUCTION

1.1 Back ground

Quality of care is the degree to which services for individuals and populations increase the likelihood of desired outcomes and is consistent with current professional knowledge. The concern for quality of care is well established among health care professionals and policy makers ¹.

Determination of the quality of nursing care dates back to the 1850s when Florence Nightingale evaluated the care delivered to the sick. She kept notes on her observations and used the information to establish the level of care being provided and to improve care in areas that were sub-standard. Some of the methods used to determine the quality of nursing care include comments from patients and others, special rounds of patient units and checks on procedures ².

Quality paediatric nursing care is viewed in different perspectives. Whereas health care professionals view competent nursing care as quality nursing care, children's parents/guardians perceive quality paediatric nursing care as caring and interpersonal interactions between nurses, children and their parents/guardians³.

Nursing care of children is different from that of adults. Changes in children health status and determinants occur more rapidly. Children are more often unable to communicate verbally and they cannot be viewed in isolation from their families. Parental role in shaping a child's response is also crucial and also their involvement in preparing their child for hospital experiences is paramount ^{4, 5,}
and 6.

Childhood preventable and treatable conditions are highly prevalent in the world especially in developing countries ^{7, 8, 9, 10}. Each year, more than 10 million children under the age of five years die globally from a handful of preventable and treatable health conditions which include pneumonia, malaria, diarrhea/dehydration, meningitis and malnutrition. For every two people who die of traffic accidents, twenty children die from preventable and treatable causes ¹¹.

These preventable health conditions have also caused high hospital admission rates with paediatric patients occupying a big percentage of hospital beds. This has caused high bed occupancy that goes up to 210% ^{12, 13}. Quality of nursing care to these patients has been compromised as a result of this congestion ¹⁴. The high prevalence necessitated the development and adoption of the integrated management of childhood illnesses (IMCI) strategy by the World Health Organisation (WHO) in handling these conditions¹⁵.

In Kenya as in other African countries, these preventable diseases are the major causes of infant and child morbidity and mortality ^{16, 17}. According to the admission registers in paediatric medical wards, at Kenyatta National Hospital (KNH) children under five years of age form 84.6 % of the paediatric admissions. Of these, 64% are admitted with acute preventable and treatable conditions.

The Ministry of Health of the Kenya Government aims at reducing the morbidity and mortality of children under five years of age from 70% to 40% ¹⁸. Commitment of key stakeholders in health care is essential for the attainment of this goal. Among them, the nurse has been underscored as the principal health care provider owing to the fact that he/she is the one with the patient most of the time. Nurses make the critical mass of the health care providers ^{16, 20}.

1.2 Problem statement

The quality of medical and nursing care provided in hospitals in developing countries has an impact on the health and lives of millions of children each year. Recent evidence suggests that such care is poor in several places²². Extensive quality problems have been documented across all sectors of health services for children^{20, 21, 22}.

Parent involvement in planning for the nursing care of children has been emphasized however; studies indicate that parents are often under-used⁵. The situation has not been established however in Kenya and also data are lacking on the quality of nursing care provided to children admitted with preventable and treatable medical conditions.

There has been an increasing outcry of falling standards of health care in hospitals²³. Many a times health care providers including the nurse do not follow recommended procedures or do not carry out required tasks at all^{23,24}. In a mortality meeting at one of the paediatric wards at KNH, it was noted that 25% of the paediatric patients die within the first 24 hours of admission. One of the contributing factors was said to be delay in starting treatment. This clearly points to the nurse as she/he is the one charged with the responsibility of administering most of the drugs to the patients and therefore the need to determine the quality of care provided and the factors that influencing it.

Although studies have been done locally on how to improve the healthcare of children, no study has been done on how nursing care can be improved. Furthermore these studies have been done in the first level referral hospitals but not in tertiary level referral hospitals²⁵. Therefore this study was designed to determine the quality of nursing care of children aged 0-5 years suffering from acute preventable and treatable medical conditions admitted at KNH with a view to make recommendations for improving the quality of nursing care.

1.3 Justification

The health-status of children is an indicator of a country's level of health. Ill health is one of the principal reasons why households become poor and remain poor. Sick children require increased family expenditure because of hospital fees and out of pocket costs for both the patient and guardian⁹. Poor quality of nursing care escalates these costs further as it leads to prolonged periods of hospitalization which leads to the increased risk of acquisition of nosocomial infections by both the sick child and the guardian and eventual congestion of the wards. Therefore, improvement of the quality of nursing care will lead to reduction in the length of hospitalization and hence family expenditure.

Quality nursing contributes greatly to rapid achievement and restoration of children's health through provision of preventive, promotive and curative services. In this respect the outcome of this study will have relevance in improving the quality of nursing care and policy development.

Although studies have been done locally on how to improve the healthcare of children, no study has been done on how nursing care can be improved. Furthermore these studies have been done in the first level referral hospitals but not in tertiary level referral hospitals²⁵. KNH is one of the national referral and training hospitals and, is therefore expected to have all the necessary resources required for the care of paediatric patients. For these reasons the proposed study is highly relevant.

1.4 Significance of the Study

It is hoped that the findings of this study will be used to draw important and relevant lessons for improving the quality of nursing care of paediatric inpatients both in KNH and other government hospitals. The findings will also be useful in the review and formulation of policies pertinent to

child health care nursing. The information will also be relevant for teaching and learning purposes and for publication to stimulate further research interests.

The findings will thus benefit the profession of nursing, the MOH, the KNH administration and the children aged below five years and their parents/guardians.

1.5 Study questions

- ◆ What is the prevalence of acute preventable and treatable medical conditions in children aged 0-5 years in the paediatric medical wards in KNH?
- ◆ What is the level of nursing training of the nurses working in the paediatric medical wards at KNH?
- ◆ What is the nurse-patient ratio in the paediatric medical wards at KNH?
- ◆ Do nurses working in the paediatric medical wards involve parents/guardians when planning nursing care for the children?
- ◆ What procedures do nurses working in the paediatric medical wards perform to the patients on a daily basis?
- ◆ Do nurses in paediatric wards follow laid down procedures while administering oral drugs to children with acute preventable and treatable medical conditions?
- ◆ Is there any relationship between nurses' qualifications and the quality of nursing care they provide?

1.6 Objectives

1.6.1 Broad objective

To determine the quality of nursing care of children aged 0-5 years with acute preventable and treatable medical conditions admitted at KNH.

1.6.2 Specific objectives

1. To determine the prevalence of acute preventable and treatable medical conditions in children aged 0-5 years.
2. To determine the qualifications of the nurses working in the paediatric medical wards.
3. To determine the nature and extent of nurse-parent/guardian interaction in the care of the children while in the ward.
4. To determine the daily nursing procedures performed to children and their parents/guardians
5. To determine the nurses' adherence to laid down procedures for drug administration while administering oral drugs.
6. To determine the relationship between nursing qualifications and the quality of nursing care provided to children aged 0-5 years.

1.7 Hypothesis

There is no significant relationship between the nurse's level of training and the quality of nursing care provided to paediatric inpatients aged 0-5 years with acute preventable and treatable medical conditions at KNH.

Chapter Two

LITERATURE REVIEW

2.1 Quality paediatric nursing care perspectives

The profession of nursing dates back to the time of Florence Nightingale who defined the goal of nursing as to put the patient in the best condition for nature to act upon. Virginia Henderson also states that the unique function of the nurse is to assist the individual, sick or well, in the performance of those functions which he would perform unaided if he had the necessary strength, will or knowledge and to do this in such a way as to help him regain independence as soon as possible^{20,26,27}. Globally, nursing care is recognized to be critical to the performance of health care systems and attainment of health for all as they comprise the largest part of the health work force⁵.

Patients and health care professionals view quality nursing care from different perspectives. Health care professionals view competent nursing care as quality nursing care. Patients perceive quality nursing care as caring interpersonal interactions³. Parents describe caring as actions by the nurse which include acknowledging the parent's presence, listening, involving the parent and child in nursing care and communicating with them²⁸.

Quality paediatric nursing entails the nurse applying her knowledge of normal growth and development and specific disease conditions into practice together with an understanding of the paediatric unit and hospital policies and practices. She/he recognizes the child as an individual person and the family as a very important part of the child's life^{4,5,19}.

Nurses also work as partners with other professionals and occupations involved in providing health care and related services. On a day-to-day basis, the nurse cooperates with the doctor in planning

the care of patients. The smooth and efficient running of the ward depends on a good working relationship between the nurse and other healthcare providers ²⁹.

Nurses cannot provide care to hospitalized children in isolation from their family members. It is thus acknowledged that child health can only be achieved with the full participation and partnership between health workers, household members and community leaders. Nurses equip the parents with information about common causes of childhood illnesses and health according to different stages of development. They also offer interventions for their prevention and management ^{21, 30}.

Studies have shown that patients are more discriminating about nursing care than about other service areas. Their satisfaction with nursing care is the most important factor in their decision to return to a hospital. It is clear that patients consider humanistic holistic care from nurses a prerequisite for quality care ³.

2.2 Determinants of quality of paediatric nursing care

Three principal measurements of the quality of patient care have traditionally been described. They include process measurement, outcome measurement and structure measurement ²². Each of these three components has different determinants ¹.

2.2.1 Structure

Structure consists of the interaction between the health care system and the patient ¹. Structure evaluation includes assessment of number and category of nursing staff, nurse-patient ratio, patient characteristics, and the nurse's independent decisions about assessment, treatment and nursing interventions ^{22, 31}.

This is dependent upon the nurse's professional qualifications, cognitive and interpersonal competency, and ability to keep current by attending in-service courses or attending professional meetings and having technical competency³².

Structure also includes the organization's mission, vision and philosophy. For example, the Division of Nursing within KNH aims at maintaining high standards of nursing care based upon respect for the dignity and worth of the individual. They believe that nursing is essentially a social service, directed to promotion of health, the prevention of disease and caring of patients of all ages and in all stages of illness of all kinds. They further believe that each patient has a basic right to participate in his care and to receive effective nursing care, which is personal service, based on his needs as they relate to him, as an individual and his clinical disease/condition³³. Therefore, all the nurses are expected to work towards achievement of these aims. Structure characteristics can influence the quality of care positively or negatively.

2.2.2 Process

Structure and process are inextricably linked in continuous interaction. Process refers to all the interventions and interactions between patients and healthcare providers. Process deals with aspects of communication, decision-making and management of care. Communication is important for good quality care¹.

The process measurement includes an assessment of the procedures performed to and for the patient. This is carried out against set standards²¹. In Kenyan hospitals, all the nursing procedures are to be performed as per the steps prescribed by the NCK in the nurses' procedure manual³⁴. The practice is also measured against the scope of practice in which the nurses' roles are spelt out. The scope of nursing practice therefore includes promotion of health, prevention of illness, accidents

and complications, curative services, management/leadership roles, teaching and training, rehabilitative services, palliative services and research³⁵.

2.2.3 Outcome

Both structure and process will determine the outcome¹. Outcome measurement focuses on what happened to the patient as a result of the care received. This could include outcomes like specific client behavior such as compliance with treatment, knowledge about his/condition, attainment of cure, normal functioning, satisfaction, dissatisfaction or comfort²². In determining the outcome, the patient and nurse's perceptions of care must be taken into account¹.

2.3 Daily nursing procedures in the paediatric medical ward

The daily nursing procedures are those aspects of nursing that occur most frequently, affect a large number of patients and place patients at risk by not providing care correctly or providing care that is not indicated. They include comfort/caring, safety/infection control, nutrition, medication administration, personal hygiene, monitoring of vital signs, patient education and discharge planning³⁶. These services are only accomplished when the nurse utilizes the nursing process, as it is the only way through which quality and consistency are assured³⁷.

Administration of drugs is one of the nursing procedures that is performed most frequently and to almost all the patients in the ward. The nurses administer both oral and parenteral medications. Studies done in paediatric intensive care units in U.S.A and at the Royal Hospital for sick children established that 60% of drug errors were made by nurses. The most common errors were wrong timing, wrong rate or dose³⁸. It is for this reason that this study looks in depth on the administration of oral drugs and also because patients are discharged home on oral drugs and the ability of

parents/guardians to administer the drugs properly is dependent upon their experience while in the ward.

The following are the laid down steps by the NCK for the administration of oral drugs:

- Explain the procedure to the patient
- Washes hands and dries them
- Takes the treatment sheet, reads the patient's name and IPNO and confirms by calling the patient's name to ensure it is the right patient
- Reads the whole treatment sheet noting the drugs that are due to be given, according to the time and date
- Notes any contraindications, side effects, drug reaction and drug interactions
- Reads the prescription against the containers, notes the dosages on the prescription and on the container
- Calculates the amount of drug to be given
- Removes the cork/cap and pours the drug in the medicine measure
- Measures the medicine at eye level
- If the patient is using more than one mixture uses a separate container for each mixture
- Takes medicine to the patient
- Checks the dose, date and time against the prescription before giving it to the patient

- Confirms the right patient by name before giving the medicine
- Make sure the patient swallows the medicine in his/her presence
- Records all the drugs in the patient's notes and in the drug register
- Leaves the patient in comfortable position

2.5 Theoretical framework

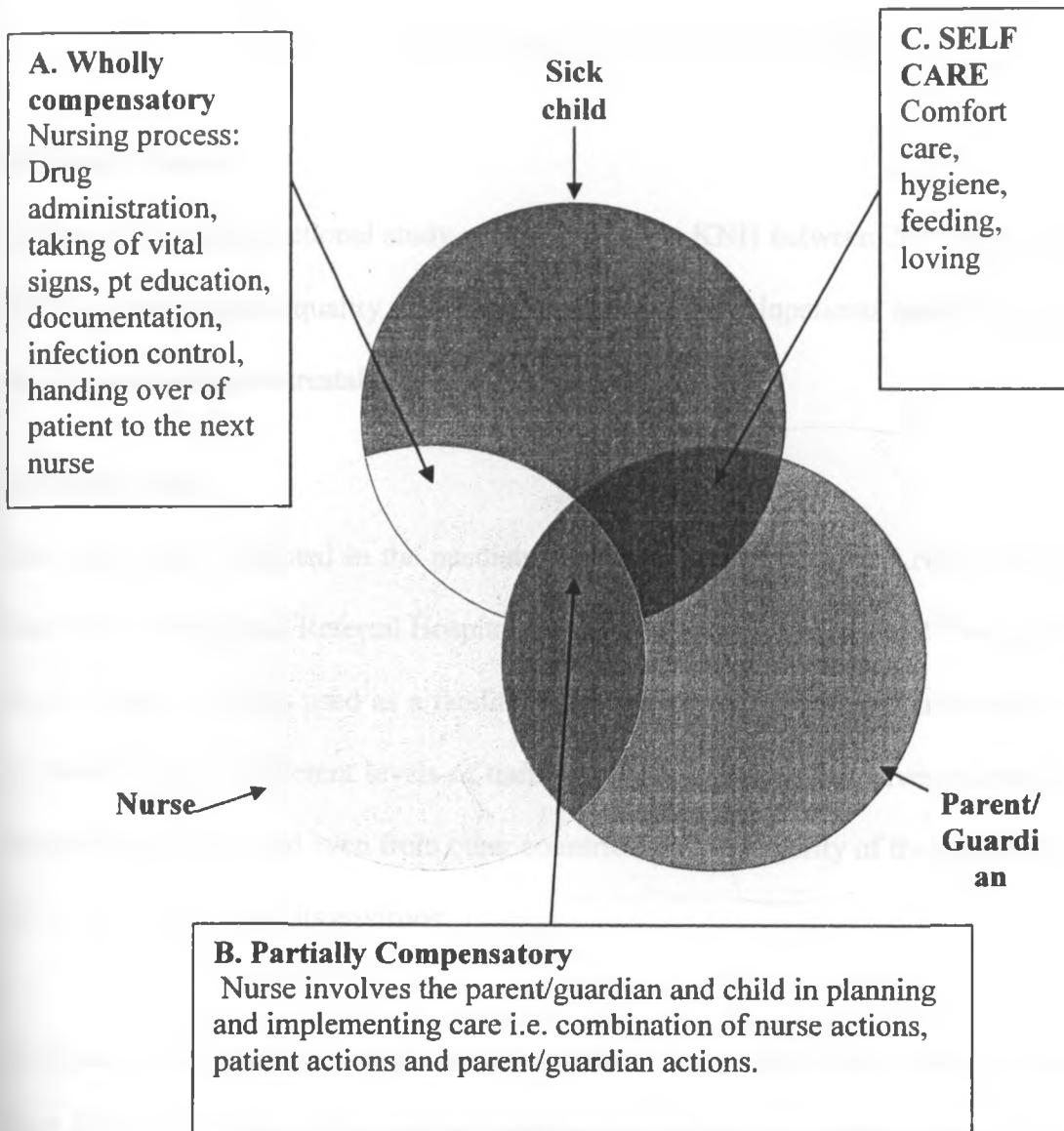
In this study, **Orem's Self Care Theory** was applied. The theory consists of three combined theories i.e. self care, self care deficit and nursing systems.

In this study the application of the theory of nursing systems is looked at. Nursing systems constitutes a series and sequence of deliberate and practical actions of nurses performed in coordination with actions of their patients to know and meet components of their patients' therapeutic self-care demands and to protect and regulate the exercise or development of patient's self-care agency. This is achieved through helping methods like guiding and directing, providing physical or psychological support and teaching.²⁶

The theorist suggests three types of nursing care i.e. wholly compensatory, partial compensatory and self-care. While caring for young children, nurses mostly apply partially compensatory in which case they work in close collaboration with the parents or guardians. They can also apply wholly compensatory nursing care especially with respect to the critically ill child or those not accompanied by a parent or guardian²⁶.

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2.6 Conceptual model



Adapted and modified from Orem's Self-Care Theory

Effective application of wholly compensatory and/ or partially compensatory = Self Care →
Quality Nursing Care

Ineffective application of wholly compensatory and/or partially compensatory = Self Care Deficit →
Poor Quality Nursing Care

Chapter Three

MATERIALS AND METHODS

3.1 Study Design

A descriptive cross-sectional study was conducted at KNH between 24th April 2006 and 26th May 2006 to determine the quality of nursing care of paediatric inpatients aged 0-5 years suffering from acute preventable and treatable medical conditions.

3.2 Study Area

The study was conducted in the paediatric medical wards of KNH. KNH is the larger of the two National Teaching and Referral Hospitals in the Republic of Kenya, the 2nd being Moi Teaching and Referral Hospital. It is used as a facility for training medical, nursing and paramedical students in all health fields at different levels of training. The hospital also receives referred patients from all parts of the country and even from other countries but the majority of the patients come from within the city of Nairobi and its environs.

KNH has eight paediatric wards four of which are the medical wards and are located on the third floor of the tower block. The medical wards admit patients on a rotational basis. Approximately, 40 patients age 0-5 years are admitted daily to the admitting ward on average. It is in these wards that the study was conducted.

3.3 Study Population

The target population consisted of all nurses and nurse in-charges working in paediatric medical wards and all parents/guardians taking care of inpatient children aged 0-5 years suffering from acute preventable and treatable medical conditions.

3.4 Inclusion Criteria

- All parents/guardians of inpatient children aged 0-5 years suffering from acute preventable and treatable medical conditions, and were staying with the children in the ward.
- All nurses and nurse in-charges working in the paediatric medical wards caring for children suffering from acute preventable and treatable medical conditions.

3.5 Exclusion Criteria

- All parents/guardians who did not consent to participate in the study or who were not staying with the children in wards.
- All parent/guardians whose children were out of the age bracket
- All parents/guardians of 0-5 children not suffering from acute preventable and treatable medical conditions
- All nurses or nurse in-charges who were off duty/ leave or who declined to consent for participation.

3.6 Sampling

a) Sample size Determination for parents/ guardians

Fisher's formula³⁹ was used for determining the sample size for parents/guardians i.e.

$$n = \frac{Z^2 pq}{d^2}$$

Where; n = the desired sample size (if target population is greater than 10000)

z = the standard normal deviate at the required confidence level (1.96)

P = Estimated number of children aged 0-5 years admitted with preventable conditions (50% was used as there was no available data)

$$q = 1-p$$

$d =$ the level of significance set [0.05 (confidence limit at 95% confidence interval)]

$$\begin{aligned}\text{Therefore } n &= \frac{1.96 \times 1.96 \times 0.5 (1-0.5)}{0.05 \times 0.05} \\ &= 384.16 \\ &= 384\end{aligned}$$

As the target population was less than 10000, the following formula was used to calculate the final sample size;

$$nf = \frac{n}{1 + (n/N)}$$

Where: $nf =$ the desired sample size (when the target population is less than 10000)

$n =$ the desired sample size (when the target population is more than 10000)

$N =$ the estimate of the population size

$$\begin{aligned}\text{Therefore } nf &= \frac{384}{1 + (384/675)} \\ &= 240 \text{ parents/guardians}\end{aligned}$$

The sampling interval was determined using the following formula:

$$\text{Sampling interval (n)} = \frac{\text{No. of children aged 0-5 years with treatable and preventable conditions}}{\text{Desired sample size}}$$

From the KNH records, the total number of children with preventable conditions admitted in paediatric medical wards per month is 675 on average

Therefore sample interval (n) = $675/2240 = 2.81$

Every 3rd patient was therefore selected from the first patient from the serialized list of patients

Systematic random sampling was used for selecting the children whose parents/guardians were to participate in the study. All children aged 0-5 years with preventable conditions in paediatric medical wards who had stayed in the ward for 24 to 48 hours were serialized on the first day of research. A table of random numbers was used to select the first patient. The 3rd patient from the first patient was then selected on a daily basis as they were being admitted until the sample size was reached. Parents/ guardians of the selected children staying with them in the wards were then requested to participate in the study.

b) Selection of nurses and nurse in-charges

All nurses and nurse in-charges on duty working in paediatric medical wards during normal working hours for the research period were included in the study. A total of 78 nurses and 4 nurse in-charges were recruited

3.7 Study Variables

a) Independent variables

- Adherence to oral drug administration procedure
- Nursing qualification
- Nurse-patient ratio
- CME attendance

- Work experience
- Orientation

b) Dependent variable

Quality of nursing care

- Nurse-parent interaction
 - Orientating parents/guardians on day of admission ,
 - involvement of parents/guardians in planning care,
 - explanation of procedures to the parents/guardians and
 - attending to parents/guardians needs
- Daily nursing services
 - drug administration,
 - taking of vital signs,
 - nutrition,
 - Hygiene,
 - health education,
 - infection control and
 - comfort caring

3.8 Data Collection

3.8.1 Study Instruments

The study tools comprised of an observation checklist and three types of questionnaires, one for parents/guardians, one for the nurses and one for the nurse in-charges. The questionnaires consisted mainly of closed -ended questions and a few open- ended questions.

The study instruments were pre-tested in the paediatric surgical ward of KNH. Those who participated in the pre-test included; 8 nurses, 25 parents/guardians and one nurse in-charge. The results of the pre-test were used to refine the instruments for validity and clarity.

3.8.2 Selection and Training of Research Assistants

Two research assistants were selected from among BSc.N interns. They were trained for two days and participated in the pre-testing in order to be familiar with the study instruments.

3.8.3 Procedure

The data collection exercise was conducted on a rotational basis whereby every ward was visited 24 to 48 hours post admission. The researcher and research assistants reported to the paediatric medical wards on a rotational basis each weekday from 8.00am to 5.00pm. The children who had stayed in the ward for one to two days were selected from the admission register and then their parents /guardians were approached, consent was requested and those who consented were interviewed by either the researcher or the research assistants using the questionnaire. The 24 to 48 hours duration was chosen so that the patients would have had nursing care in all shifts. During the same period the nurses and nurse in-charges that were on duty were requested to fill the nurses' and nurse in-charges' questionnaires respectively. Observation of administration of oral medicines was done as the researcher and research assistants participated in drug administration and also in the process of requesting the nurses to fill the questionnaire. The observation checklist was filled about 10 minutes later away from the nurses.

3.9 Data Management

At the end of everyday, the researcher and the research assistants checked through the filled questionnaires for completeness and then they stored them for data analysis at the end of the data collection exercise. The questionnaires were coded and then data entered into the computer and analysed using the “statistical package for social scientist programme (SPSS)”. Descriptive statistics were determined and used to describe the population in terms of socio-demographic characteristics, prevalence of the conditions, nurses’ qualifications and relationships. The relationship between nurses’ qualifications and parental involvement, performance of daily nursing procedures and adherence to drug administration procedures were determined by use of chi square test and Fishers exact test at 0.05 level of significance. Results are presented using tables, graphs and pie charts.

3.10 Ethical Considerations

Permission to carry out the study was sought from the KNH Research and Ethics Committee and the Ministry of Education Research Committee. Confidentiality was ensured, as the participants were not required to indicate their names on the questionnaires. Non-participating subjects were not discriminated against.

3.11 Study Limitations

The study was being conducted in KNH which is a national referral and teaching hospital. The findings therefore may not reflect the situation in other health institutions in Kenya. Further more, only children aged 0-5 years with acute preventable and treatable medical conditions were addressed. The findings therefore need not reflect the quality of nursing care for other patients, health conditions or institutional circumstances.

Chapter Four

RESULTS

A total of 256 children and their parents/guardians, 78 nurses and 4 nurse in-charges were recruited into the study. The results obtained from the study are as presented in four sections:

4.1 Characteristics of the children

4.2 Results for Parents/guardians

4.3 Results for Nurses

4.4 Results for Nurse in-charges

4.1 CHARACTERISTICS OF CHILDREN

4.1.1 Socio-demographic characteristics

Age and Sex

Table 1 presents the sex of the selected children and their distribution in the various age groups. The majority (59.4%) of the children were males. A total of 220 children were aged less than two years and out of this, 130 were males. The rest of the age groups had counts less than twenty each with the male sex being the dominant except in the 2-3 years age group in which the females were more than the males i.e. 6 and 5 respectively. The mean age of the children was 9.6 months with a median of 9 1/2 months and a range of 2 days to 5 years.

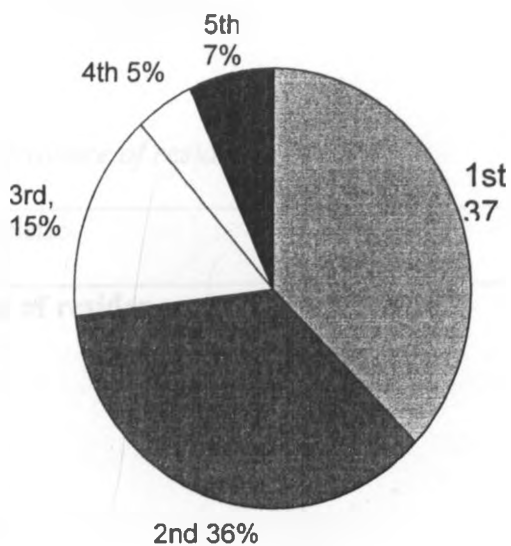
Table 1: Age-Sex Distribution

		Sex of Child		Total
		Male	Female	
Age of Child	<1 yr No.	95	60	155
	%	61.3	38.7	100.0
	1-2 yrs No.	38	27	65
	%	58.5	41.5	100.0
	2-3 yrs No.	5	6	11
	%	45.5	54.5	100.0
3-4 yrs	No.	7	6	13
	%	53.8	46.2	100.0
4-5 yrs	No.	7	5	12
	%	58.3	41.7	100.0
Total	No.	152	104	256
	%	59.4	40.6	100.0

Birth Order

Figure 1 shows the birth order distribution of the children. Majority of the children were of the first and second birth order i.e. 37.1% and 35.9% respectively. The 3rd birth order comprised 15% whereas the 4th order was 5% and those of the 5th birth order and above comprises 7%.

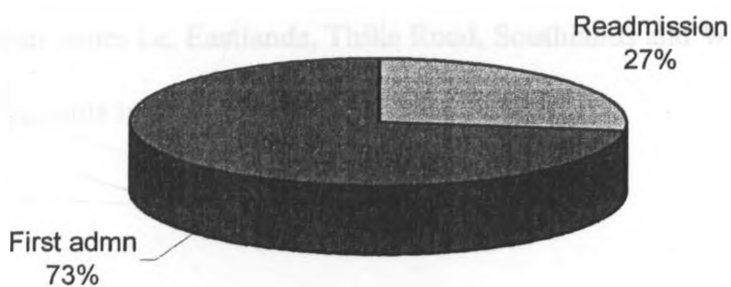
Figure 1: Birth order distribution



Admission Profile

For the majority of the children (73%), this was a first admission whereas 27% had been admitted previously. (Figure 2)

Figure 2: Admission Profile



Residence

Table 2 shows the province of residence of the selected children. Two hundred and five (80.1%) of the 256 children were from Nairobi Province. The remaining children were from the other provinces

which included: Central- 9.4%, Eastern- 2.7%, North Eastern – 0.8%, Rift Valley – 5.1%, Nyanza – 1.2% and Western 0.8%.

Table 2 Province of residence

Characteristic	Frequency	Percentage
Province of residence		
Nairobi	205	80.1
Central	24	9.4
Eastern	7	2.7
North Eastern	2	0.8
Rift Valley	13	5.1
Nyanza	3	1.2
Western	2	0.8
Total	256	100.0

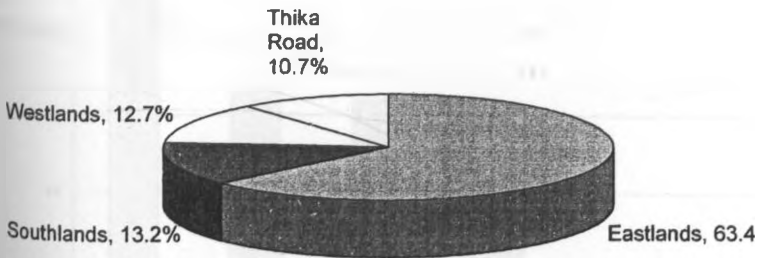
Further analysis of the residential places for those from Nairobi Province was done. Nairobi was divided into four zones i.e. Eastlands, Thika Road, Southlands and Westlands. The residential estates of the patients in each zone are presented in table 3.

Table 3: Estates in each zone

Zone	Estates
Eastlands	Huruma, , Kayole, Dandora,Mathare,Ruai, Mukuru, Eastleigh, Makadara, Pipeline, Industrial Area, Majengo, Buruburu,Makongeni, Mbotela, Embakasi, Mlango Kubwa, Starehe, Kamkunji, Bahati and Jericho
Thika Road	Ruaraka, Baba Dogo, Kasarani, Githurai, Thome
Southlands	Kibera, South B, Ngumo,Otiende
Westlands	Kangemi, Uthiru, Wangige, Riruta, Dagoretti, Kawangware, and Sigona

Figure 3 presents the distribution of the patients in the four zones. Of the 80.1% patients from Nairobi, the majority (63.4%) of the patients were from East-lands with most of them coming from Huruma (21.5%), Dandora (15.4%) and Mathare (14.6%). The other zones had an almost equal presentation which was: Southlands-13.2%, Westlands-12.7% and Thika Road-10.7%.

Figure 5.3: Distribution of the patients in the four zones

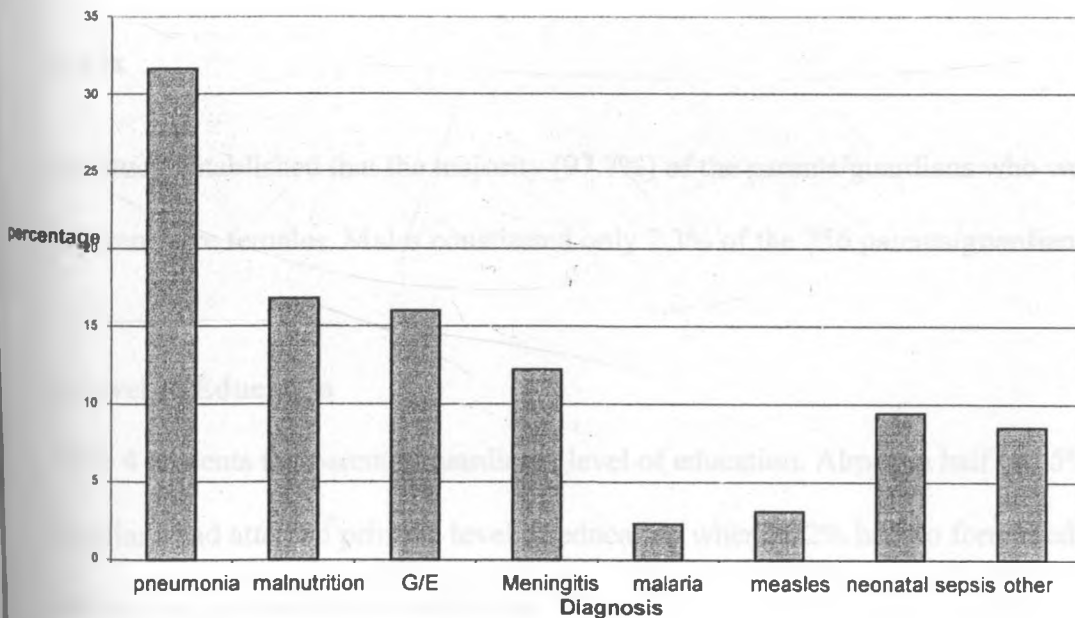


4.1.2 Prevalence of the Acute Treatable and Preventable Conditions

A total of 1042 children were admitted to the paediatric medical wards during the one month study period. Out of these admissions, 922 were aged 0-5 years of whom 817 had the acute preventable and treatable medical conditions giving rise to a prevalence of 88.6% over a period of one month.

Figure 4 presents the prevalence of the acute treatable and preventable conditions among the selected children. Majority (31.6%) of the children had pneumonia; this was followed by malnutrition (protein energy malnutrition (PEM), marasmus, rickets) and anaemia (16.8%) and gastroenteritis 16%. Measles and malaria were present in less than 10%. Neonatal sepsis and meningitis/convulsive disorders were found in 9.4% and 12.2 % of the patients respectively. The “other” conditions (dermatitis, bronchiolitis, bronchospasms, and asthmatic attack) were found in 8.5% of the selected children.

Figure 4: Prevalence of acute preventable and treatable medical conditions:



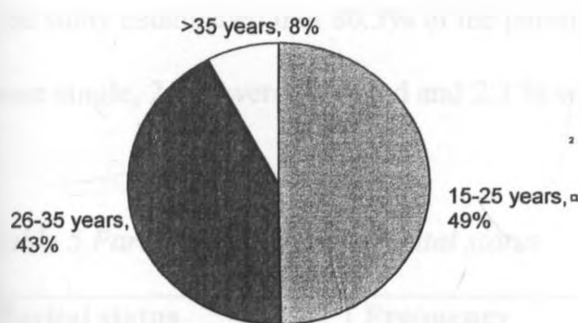
4.2 RESULTS FOR PARENTS'/GUARDIANS

4.2.1 Socio-Demographic Characteristics

a) Age

Figure 5 represents the ages of the parents/guardians. Out of the 256 parents/guardians, 127 (49%) of them were aged between 15-25 years. Those aged between 26-35 years constituted 43% and those above 35 years 8%.

Figure 5: Parents'/guardians' age



b) Sex

The study established that the majority (97.7%) of the parents/guardians who were staying with the children were females. Males constituted only 2.3% of the 256 parents/guardians interviewed.

c) Level of Education

Table 4 presents the parents'/guardians' level of education. Almost a half (46.5%) of the parents/guardians had attained primary level of education whereas 2% had no formal education and 8.2% had attained post-secondary education.

Table 4: Parents'/Guardians' Level of Education

Level of education	Frequency	Percentage
No education	5	2.0
Primary	119	46.5
Secondary	111	43.4
Post secondary	21	8.2
Total	256	100.0

d) Marital Status

The study established that 80.5% of the parents/guardians were married whereas 13.7% of them were single, 2.7% were divorced and 2.3 % were widowed. (table 5).

Table 5 Parents'/guardians' marital status

Marital status	Frequency	Percentage
Married	206	80.5
Single	35	13.7
Divorced	7	2.7
Widowed	6	2.3
Separated	2	0.8
Total	256	100.0

e) Occupation

Majority of the parents/guardians, constituting 54.3%, were housewives (table 6). The rest of the respondents comprised business people (16%), farmers (3.9%), security guards (3.9%), attendants

(2.7%) teachers (2.3%), and casual-labourers (3.9%). Those falling in the “other” category comprised 3.9% of the respondents and included lawyer, pharmacist, messengers, computer technician and a social worker.

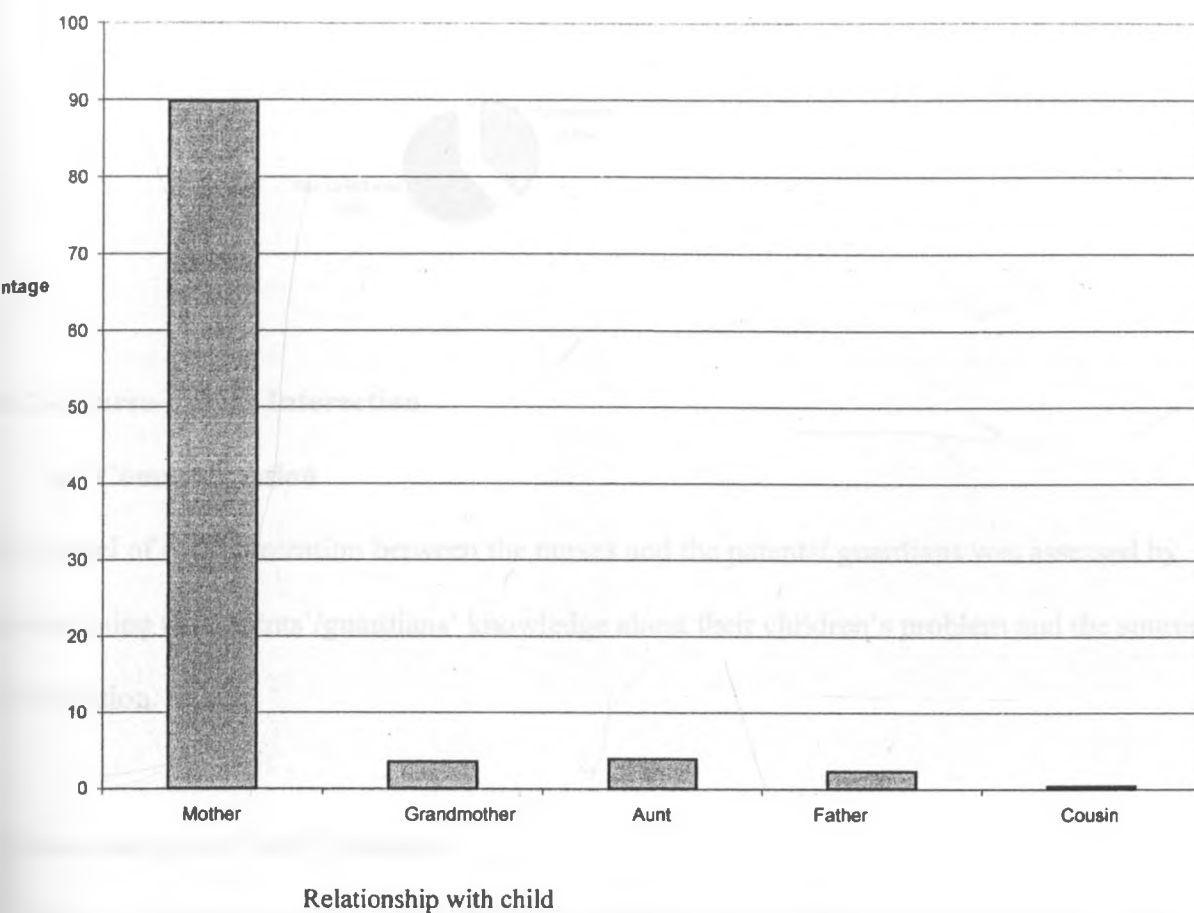
Table 6: Parents '/guardians' occupation

Occupation	Frequency	Percentage
Housewife	139	54.3
Farmer	10	3.9
Business	41	16.0
Teacher	6	2.3
Casual labor	10	3.9
Security Guards	10	3.9
Attendants	7	2.7
Unemployed	23	9.0
Other	10	3.9
Total	256	100.0

4.2.2 Relationship with Child

Figure 6 shows the relationship of the parents/guardians to the children. Most (89.8%) of the children’s care takers were mothers, whereas fathers were 2.3 %. Others interviewed included aunts (3.6%), grandmothers (3.5%) and cousins (0.4%).

Figure 6: Relationship of the parents/guardians to the children



4.2.3 Orientation in the Ward

When parents/guardians were asked about being orientated by the nurse who admitted them in the ward on the day of admission, 62.9% said that they were not given any orientation. Only 37.1% of the parents/guardians acknowledged being orientated by the admitting nurse in the ward.(Figure 7)

Figure 7: Parent/Guardian Orientation



4.2.4 Nurse-Parent Interaction

a) Communication

The level of communication between the nurses and the parents/ guardians was assessed by determining the parents'/guardians' knowledge about their children's problem and the source of information.

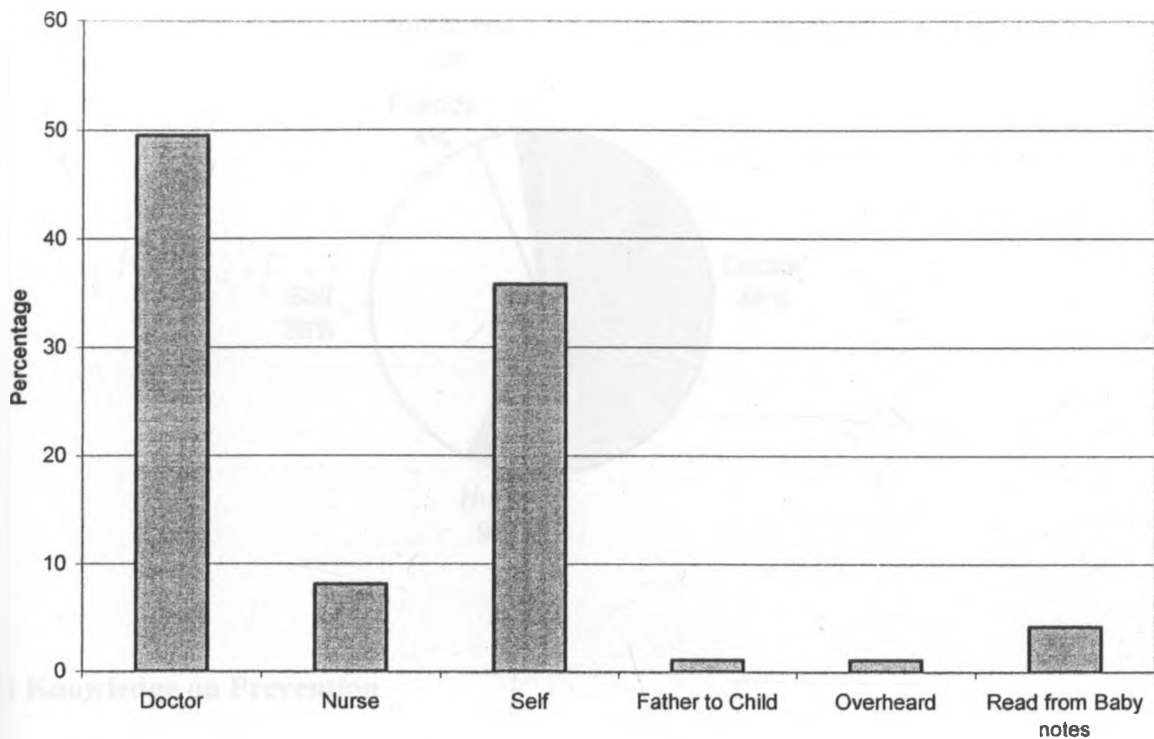
i) Knowledge of Child's Sickness

Table 7 indicates the parents'/guardians' knowledge about their children's problem. Only a few (37.1%) of the parents/guardians knew about their children's sickness. Among them, nurses had informed only 8.1%. The rest of them obtained information from: Doctors (49.5%), self (35.8%), father of child (1.1) and overhearing during discussions (1.1%) and reading from the baby's notes (4.2%). (Figure 8).

Table 7: Parent/Guardian knowledge of Child's sickness

Knowledge about child's sickness	Frequency	Percentage
Yes	95	37.1
No	161	62.9
Total	256	100.0

Figure 8: Source of Information on Child's Sickness



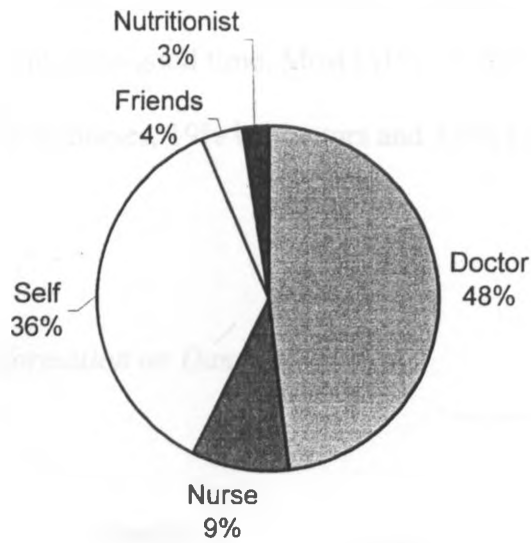
II) Parent's/guardian's Understanding of the Cause of the Child's sickness

Only 30.1% parents/guardians had an understanding of the cause of their child's sickness (table 8). Out of these, only 9.1% had been informed by the nurses. The rest of them were informed by doctor (48.1%), Self (36.4%), friends (3.9%) and nutritionist (2.6 %). (Figure 9).

Table 8: Parent's/Guardian's Understanding of the Cause of the Child's Sickness

Understanding of the cause o sickness	Frequency	Percentage
Yes	77	30.1
No	179	69.9
Total	256	100.0

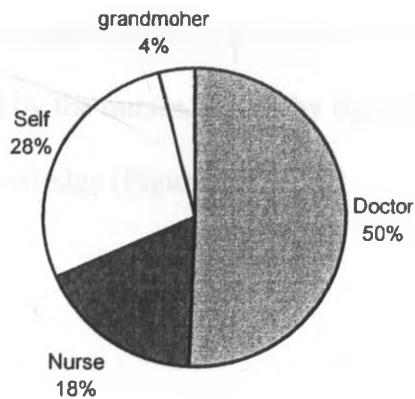
Figure 9: Source of Information on Cause of Child's Sickness



III) Knowledge on Prevention

A total of 79 parents/guardians had knowledge on how they would prevent their child's problem. Among them, only 14 (17.7%) had been given the information by nurses. Those informed by the doctor comprised 50.6%, Self – 27.8% and child's grandmother – 3.8% (Figure 10)

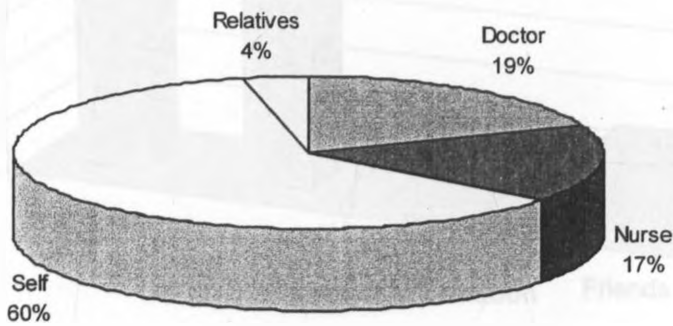
Figure 10: Source of Information on Prevention



IV) Knowledge of Danger Signs

The majority (78.1%) of the parents/guardians knew the danger signs they would look for in the child to seek medical attention in good time. Most (61%) of them had self-knowledge whereas only 17% were informed by nurses, 19% by doctors and 3.5% by relatives informed 16.5% (Figure 11).

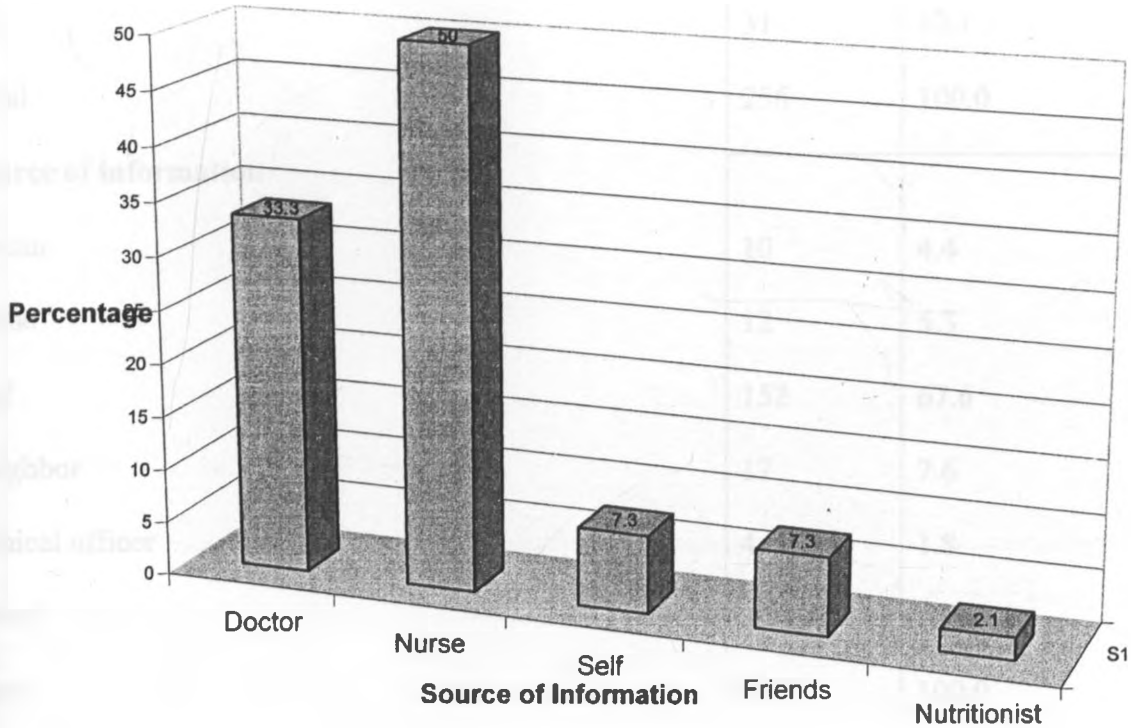
Figure 11: Source of Information on Danger Signs



V) Information on Home Care

The majority (62.5%) of the parents/guardians lacked information on how to care for the children at home. Only 37.5% of them knew how to care for the child at home with a half (50%) of them having been informed by the nurses, 33.3% by the doctor, 7.3% by friends. 2.1% by a nutritionist and 7.3% had self knowledge (Figure 12).

Figure 12: Source of Information on Home Care



The majority (87.9) of the parents/guardians were aware of available community facilities that they could use incase of need. Among them, only 5.3% were informed by the nurses whereas the rest were informed by; doctors (4.4%), neighbour (7.6%), friends (13.3%) and clinical officer (1.8%) and most of them had self knowledge. (Table 9).

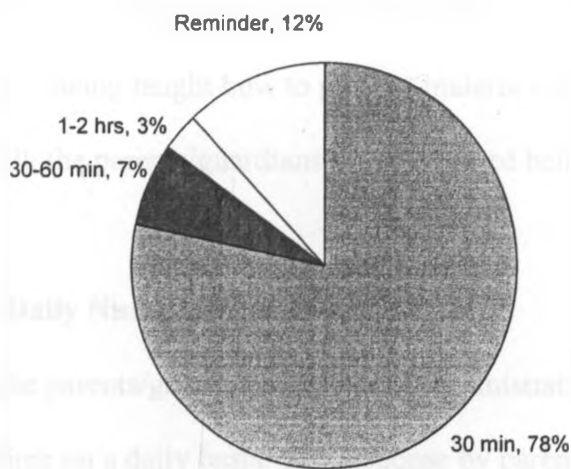
Table 9: Parent's/Guardian's Knowledge about Available Community Facilities

Knowledge about relevant community facilities for use	Frequency	Percentage
Yes	225	87.9
No	31	12.1
Total	256	100.0
Source of information		
Doctor	10	4.4
Nurse	12	5.3
Self	152	67.6
Neighbor	17	7.6
Clinical officer	4	1.8
Friend	30	13.3
Total	225	100.0

b) Reception of Attention from Nurses

Parents/ guardians were asked whether they received attention from the nurses when they had a need and the duration of time it took to be attended to. Most (88.3%) of them said they were attended to. For majority of them (78.3%), the nurse responded within 30 minutes. For 6.6% of them, the response time was 30-60 minutes. For 3.1% of these parents/guardians, it took 1-2 hours and for 11.9% the nurse had to be given a reminder. The results are shown in figure 13

Figure 13: Response time by nurses



c) Involvement in Decision Making

Majority (66%) of the parents/guardians acknowledged being involved in the planning of the child's care while in the ward. The involvement modalities included:

- Communicate child's progress to the nurse- 23.3%
- The nurse explains the baby's condition and informs them what do next – 16.8%
- Assist in the performance of some procedures like drug administration – 15.6%
- The nurse gives the instructions to be followed -13.2%
- Being told to remove excess clothing when the child had fever – 11.4%
- Monitoring the child's condition and helping the nurse – 9%
- Helping the nurse in identifying child's sickness and assisting in implementing their decision.- 6.6%
- Being taught how to take care of the baby – 5.4%
- Asking for drugs when the baby has fever -4.2%
- Asking the nurse how the baby is doing -3.6%
- The nurse administers drugs – 3.6%

- Discuss the progress of the baby together – 2.4%
- The nurse explains the investigations to be done – 2.4%
- Being taught how to prevent malaria – 0.6 %

Overall, the parents/guardians acknowledged being in continuous dialogue with the nurse.

4.2.5 Daily Nursing Procedures

All the parents/guardians cited drug administration as the procedure that was performed to their children on a daily basis. The response by parents/guardians on other procedures was as follows: taking of vital signs- 70.3%, nutrition – 32.8%, hygiene- 23.4%, and health education- 11.7%.

Other services received, accounting for 2% of the responses, included wound dressing, immunization, payment of bills and orientation on behaviour in the wards, and discharge planning (table 10.)

Table 10: Parents '/guardians' response on nursing procedures (n=256)

Procedure	Frequency	Percentage
Drug administration	256	100
Taking of vital signs	180	70.3
Nutrition	84	32.8
Hygiene	60	23.4
Health education	30	11.7
Other	5	2

NB: Total response more than 256 due to multiple response

4.2.6 Knowledge of Drugs

Table 11 indicates the parents'/guardians' knowledge about drugs their children were using and the likely effects. Slightly more than half (50.4%) of them knew the medicines. Out of these, 65.1% knew from reading the baby notes. Only 12.4% were informed by the nurses. The study established that the 98.4% of the parents/guardians who knew the drugs their children were receiving also knew the effects of the drugs. Out of these, only 22.8% had been informed by the nurses.

Table 11: Parents/Guardians' knowledge of drugs

Knowledge	Frequency	Percentage
Types of medicines		
Yes	129	50.4
No	127	49.6
Total	256	100.0
Source of information		
Doctor	19	14.7
Nurse	16	12.4
Read from notes	84	65.1
Has similar drugs at home	3	2.3
Read from drug container	7	5.4
Total	129	100.0
Effects of drugs		
Yes	127	98.4
No	2	1.6
Total	129	100.0
Source of information		
Doctor	27	21.3
Nurse	29	22.8
Self	71	55.9
Total	127	100.0

Use of Syrup Medications

The survey established that the majority (82.4%) of the children were receiving medications in form of syrups. Table 12 indicates the results of parents'/guardians' response on what was used to measure their children's syrup medications. Slightly more than half (52.7%) of the parents/guardians indicated that their children's drugs were measured by tea spoons. The other measuring tools included: table spoon- 29.3%, syringe -1.2 %and calibrated measure -0.4 %.

Table 12: Age of child and tool used for measurement of syrup medications

Age	Tool			
	Table spoon	Teaspoon	Syringe	Calibrated measure
<1 yr	38	89	1	1
1-2 yrs	19	38	1	0
2-3 yrs	6	4	0	0
3-4 yrs	6	3	1	0
4-5 yrs	6	1	0	0

The syrup medications that were commonly used by most children included multivitamin and paracetamol.

Relationships

a) Relationship between Admission Profile and Parent/guardian Knowledge of Child's

Sickness

Table 13 presents the results of the association between child's admission profile and parent's/guardian's knowledge about the child's sickness. The parents/guardians whose children

had had previous admissions were 1.4 times more likely to know the child's problem than those whose children were admitted for the first time. However the influence of previous admission was found to be statistically insignificant (OR= 1.372, 95% CI: 0.739-2.545, P=0.315).

Table 13: Relationship between admission profile and parent/guardian knowledge of child's sickness

		Knowledge of Child's Sickness		Total	
		Yes	No		
Any Previous admission	Yes	No.	51	18	69
		%	73.9	26.1	
	No	No.	126	61	187
		%	67.4	32.6	100.0
Total		No.	177	79	256
		%	69.1	30.9	100.0

$X^2 = 1.008$, $P = 0.315$ (95% CI: 0.739-2.545; OR = 1.372)

b) Relationship between Parent/Guardian's level of Education and Knowledge of Child's Sickness

Parent's/guardian's level of education was compared with their knowledge of the child's sickness.

There was no statistically significant relationship between the parent's/guardian's level of education and their knowledge on the child's sickness ($X^2 = 0.847$, $p = 0.655$). (Table 14).

Table 14: Relationship between parent's/guardian's level of education and knowledge of child's sickness

		Knowledge of Child's Sickness		Total
		Yes	No	
Level of education	Primary	No. 82 % 66.7	41 33.3	123 100.0
	Secondary	No. 80 % 72.1	31 27.9	111 100.0
	College	No. 15 % 71.4	6 28.6	21 100.0
Total		No. 177 % 69.4	78 30.6	256 100.0

$X^2=0.847$; $p= 0.655$

c) Relationship between Parent/Guardian's Level of Education and Involvement in Decision Making

Table 15 indicates the relationship between the parent's/guardian's level of education and their involvement in decision making. There was no statistically significant relationship between the parent's/guardian's level of education and their involvement in decision making ($X^2=2.556$; $p=0.279$).

Table 15: Relationship between parent's/guardian's level of education and Involvement in Decision Making

		Involvement in Decision Making		Total
		Yes	No	
Level of education	Primary	No. 75 % 61.0	48 39.0	123 100.0
	Secondary	No. 78 % 70.3	33 29.7	111 100.0
	College	No. 15 % 71.4	6 28.6	21 100.0
Total		No. 168 % 65.9	87 34.1	256 100.0

$X^2= 2.556$; $p=0.279$

d) Relationship between Parent's/Guardian's Level of Education and Knowledge about Drugs

The parent's /guardian's level of education had no statistically significant influence on their knowledge of the drugs their children were using ($X^2=3.538$; $p=0.170$). (Table 16).

Table 16: Relationship between parent 's/guardian's level of education and Knowledge about Drugs

		Knowledge of Drugs		Total
		Yes	No	
Level of education	Primary	No. 56 % 45.5	67 54.5	123 100.0
	Secondary	No. 58 % 52.3	53 47.7	111 100.0
	College	No. 14 % 66.7	7 33.3	21 100.0
Total		No. 128 % 50.2	127 49.8	256 100.0

$X^2=3.538$; $p=0.170$

4.2.7 Suggestions for Improvement to Better Satisfy the Parents/Guardians.

The parents/guardians were asked whether they had any suggestion on how the quality of nursing can be improved to better satisfy them. The majority (74%) had suggestions to make and were to the effect that the nurse should:

- Provide immediate attention and implement decisions as soon as they are made – 25.9%
- Have the heart to help and not to quarrel the parents but rather be polite – 7.4%
- Give counseling as per child's condition – 7.4%
- Not reply badly or be rude when called- 6.9%
- Services are good – 5.3%
- Should offer their expected – 4.2%
- should be close to the patient and not be cold or distant – 4.2%

- Give information about drugs and other procedures – 4.2%
- Be talking more to the patient – 3.2%
- Keep checking the child's condition – 2.6%
- Teach mothers how to care for the children -2.6%
- Verify the child's status before giving drugs – 2.6%
- Be careful especially in noting when a child is finishing the doses of prescribed drugs – 2.1%
- Be consistent with the information they give – 1.6%
- Doctors should be available all the time – 1.6%
- Note and follow up care – 1.1%
- Explain why the child gets the prescribed drug – 1.1%
- Increase the nursing staff – 1.1%
- spend time with them -1.1%
- orientate parents when they come to the ward – 0.5%
- settle the patients when they come to the ward rather than telling them to look for beds - 0.5%
- The wards be decongested -0.5%
- Exempt under fives from paying hospital charges- 0.5%

4.3 RESULTS FOR NURSES

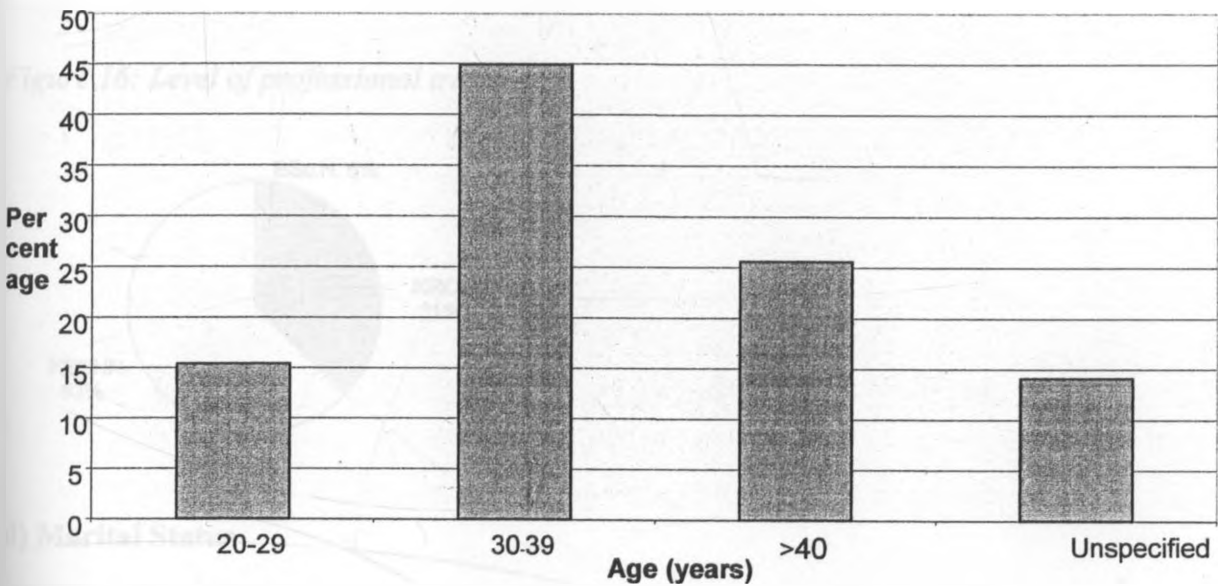
A total of 78 nurses were recruited into the study. Data obtained from them is presented in the sections below.

4.3.1 Socio-Demographic Characteristics

a) Age

The majority (44.9%) of the nurses interviewed were aged between 30 and 39 years. Those aged between 20 and 29 years were 15.4%, 25.6% were aged over 40 years and 14.1% didn't specify their age (Figure 14).

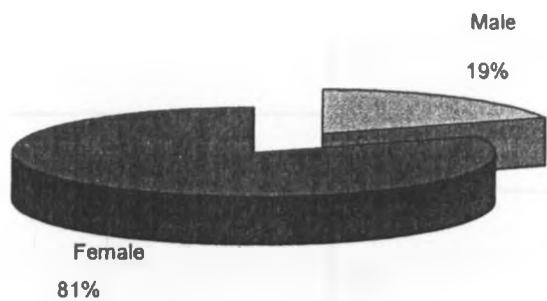
Figure 14: Nurses' age



b) Sex

The survey established that a large proportion i.e. 81.2% of the nurses were females. The males comprised 18.8% of all the nurses who participated in the study (15).

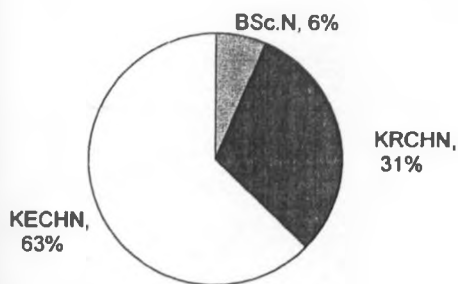
Figure 15: Sex distribution among the nurses.



c) Level of Professional Training

Figure 16 presents the level of professional training of the nurses. Out of the 78 nurses interviewed, 62.8% were enrolled community health nurses, 30.8% were diploma level registered nurses and 6.4% were degree registered nurses (BSc.N).

Figure 16: Level of professional training



d) Marital Status

Table 17 presents the marital status of the nurses. The majority (66.7%) of the nurses were married whereas 25.6% were single and 5.1% were widowed. Others, who made 2.6% of the respondents, were either divorced, separated or non-committal on their marital status.

Table 17: Nurses' marital status

Marital status	Frequency	Percentage
Married	52	66.7
Single	20	25.6
Widow	4	5.1
Other	2	2.6
Total	78	100.0

e) Work Experience

On working experience, 33.3 % of the nurses indicated that they have worked for between 5-10yrs whereas 26.6% have worked for more than 15 years, 24.4% for between 10 and 15 years and 15.4% for less than 5 years. Most (57.7%) of the nurses had worked in other departments and 44.9% had worked in the paediatric works for more than 6yrs (table 18).

Table 18: Work Experience

Characteristic	Frequency	Percentage
Nursing experience		
<5yrs	12	15.4
5-10yrs	26	33.3
10-15 yrs	19	24.4
>15 yrs	21	26.9
Total	78	100.0
Work in other departments		
Yes	45	57.7
No	33	42.3
Total	78	100.0
Experience in Paediatrics		
<1 yr	13	16.7
1-3yrs	9	11.5
4-6 yrs	21	26.9
>6yrs	35	44.9
Total	78	100.0

f) Attendance of Continuing Medical Education Sessions

The majority (69.2%) of the nurses had attended some continuing medical education (CME) sessions since they started working in the paediatric wards. Among the subjects covered were HIV/AIDS, Lactation management, Prevention of Mother to Child Transmission (PMTCT) of HIV, Cytotoxic drug management, Control of Diarrhea Diseases (CDD), Acute Respiratory Tract

Infections (ARTI), management of Pulmonary Tuberculosis (PTB), infection control and customer care. Other sessions attended included adherence counseling, basic and advanced life support and comprehensive paediatric HIV care. None of the nurses has had a special training in paediatric nursing.

4.3.2 Orientation

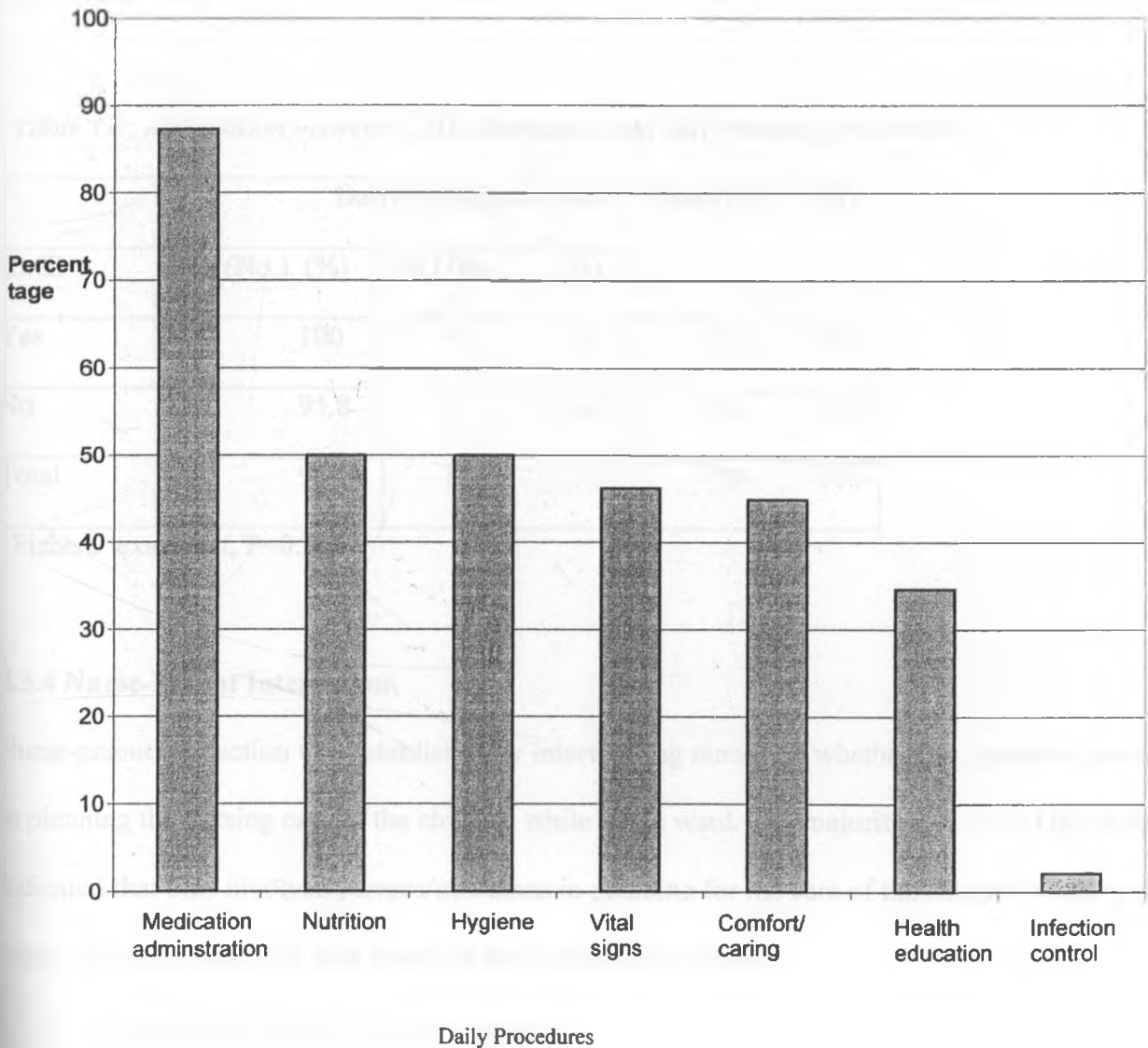
The study established that 83.3% of the nurses interviewed were orientated when they reported to the current wards. All the nurses who had been orientated indicated that the content of orientation was on ward layout and introduction to the other staff working in the ward. A small percentage indicated that they were given orientation on the following aspects:

- Daily procedures in the ward or ward routine -10.3 %
- paediatric drug dosages – 6.4%
- work expectations – 6.4%
- Taking and handing over report - 5.1%
- duties -5.1%
- The time to give medicines -3.8%
- how to care for children and nurse-parent interaction –3.8 %
- Admission and discharge procedure – 3.8%
- types of patients admitted to the ward and how they are managed – 2.7%
- Interacting departments – 2.7%
- Hospital drug policy -1.8%
- ward management – 1.8%
- Primary nursing – 1.8%
- Job description – 1.8%

4.3.3 Daily Nursing Procedures

All the nurses indicated that there were procedures that they performed to the patients on a daily basis. The main procedures identified included: Administration of medications (88%), feeding (50%), bathing (hygiene) (50%), comfort caring (45%), health education (35%), taking of vital observations (47%) and infection control (2%) (Figure 17).

Figure 17: Nurses' responses on daily nursing procedures



Other procedures that were minimally identified included ordering of drugs and supplies, dealing with visitors and relatives, attending ward rounds, receiving patient reports, weighing the children and taking specimen for investigations. Dressing of wounds, documenting in the cardex and charging files for the discharged patients were also identified.

Comparison was done between nurses who had attended CME sessions and those who had not on their level of knowledge on daily nursing procedures. In applying Fishers' exact test for the level of significance of 5%, there was no statistically significant difference in their responses (P = 0.308) (table 19).

Table 19: Association between CME attendance and daily nursing procedures

CME	Daily nursing activities				Total (No.) (%)	
	Yes (No.) (%)	NO (No.) (%)				
Yes	54 100	0 0			54 100	
No	23 95.8	1 4.2			24 100	
Total	77 98.7	1 1.3			78 100	

Fishers' exact test, P=0.308

4.3.4 Nurse-Parent Interaction

Nurse-parent interaction was established by interviewing nurses on whether they involved parents in planning the nursing care of the children while in the ward. The majority (74.4%) of the nurses indicated that they involved parents/guardians in planning for the care of the children while in the ward. They indicated that they involved the parents/guardians by:

- Giving them health education.- 22.4%

- encouraging them to participate in performing some of the procedures like feeding and bathing 17.2%,
- Reassuring them -17.2%
- obtaining consent from them before performing any procedure on the child 13.8%
- Answering questions from them and clarifying information-10.3%
- explaining to them the condition of the child, treatment and prognosis 8.1%
- Explaining procedures – 7%
- Assisting in spiritual care of the patient and what the hospital cannot offer- 3.4%

4.3.5 Relationships

a) Association between Nurses' Qualification and Parent/Guardian Involvement

Nurses with at least a diploma in training were more likely to involve parents/guardians than the certificate level nurses. This was however, not statistically significant (OR=1.533; 95 % CI: 0.515-4.567). In using Chi square test for significance at 95% confidence interval, no statistically significant relationship was found between the nurse's level of training and parent/guardian involvement (P= 0.59). The results are indicated in table 20.

Table 20: Association between Nurses' qualification and parent involvement

Professional qualification	Parental involvement		Total (No.) (%)	95% CI:0.515-4.567		
	Yes (No.) (%)	NO (No.) (%)		X ²	P	OR
KRCHN and above	20 83.3	4 7.7	24 100	0.594	0.593	1.533
KECHN	34 69.4	15 30.6	49 100			
Total	57 73.1	21 26.9	78 100			

b) Association between Nurses' Work Experience and Parent Involvement

Table 5.21 indicates the results of the comparison between nurses' working experience and parental involvement in planning for the nursing care of the children. The proportion of nurses according to the years of experience who had a positive response on involving parents was; 90.8% for the group with 5-10 years, 76.2% for those with >15 years and 75 % for those with <5 years.

Table 5.21: Association between Nurses' work experience and parental involvement

Nursing experience	Parent Involvement				Total (No.) (%)	
	Yes (No.)	(%)	No (No.)	(%)		
< 5yrs	9	75	3	25	12	100
5-10 yrs	21	90.8	5	9.2	26	100
10-15 yrs	12	63.2	7	36.8	19	100
>15 yrs	16	76.2	5	23.8	21	100

c) Association between Nurses' working in other departments and Parent Involvement

Comparison of parent/guardian involvement was done also between nurses who had worked in other departments and those who had not. In a chi square test at 95% significance interval, there was no statistically significant difference between the nurses who had worked in other departments and those who had not (OR=1.159; 95% CI: 0.416-3.228, P= 0.777). The results are presented in table 22.

Table 22: Association between Working in other departments and parent involvement

	Parent involvement				Total (No.) (%)	
	Yes (No.) (%)	NO (No.) (%)				
Worked in other departments						
Yes	34 75.5	11 24.5			45 100	
No	24 72.7	9 27.3			33 100	
Total	58 74.4	20 25.6			78 100	

$X^2 = 0.08$; $P = 0.777$; $OR = 1.159$; 95% CI: 0.416-3.228

d) Association between Nurses' CME Attendance and Parent Involvement

Parent involvement among the nurses who had attended CME sessions was compared with those who had not. The nurses who had attended CME sessions were 1.3 more times more likely to involve parents than those who had not, CME was weakly likely to cause the difference ($OR = 1.299$; 95% CI: 0.442-3.820). There was no statistically significant difference between the nurses who had attended CME sessions and those who had not attended ($X^2 = 0.226$; $p = 0.635$).

(Table 23)

Table 5.23: Association between CME attendance and parent involvement

CME	Parent involvement				Total (No.) (%)	
	Yes (No.) (%)	NO (No.) (%)				
Yes	41 93.2	13 6.8			44 100	
No	17 70.8	7 29.2			24 100	
Total	58 74.4	20 25.6			78 100	

$X^2 = 0.226$; $p = 0.635$; $OR = 1.229$; 95%CI: 0.442-3.820

e) Association between Nurses' Orientation and Parent Involvement

Table 24 presents the relationship between orientation for nurses and parent involvement. The nurse who had been orientated in the ward was two times more likely to involve parents when planning for the child's care than those who had not. However the influence of orientation on parent involvement was found to be statistically insignificant. (OR=2.083; 95% CI: 0.592-7.327).

Table 24: Association between orientation for nurses and parent involvement

Orientated	Parent involvement			95% CI	OR
	Yes	No	Total		
Yes	50	15	65	0.592-7.327	2.083
No.	76.9	23.1	100.0		
No	9	5	13		
No.	61.5	38.5	100.0		
Total	58	20	78		
%	74.4	25.6	100.0		

4.3.6 Adherence to Drug Administration Procedure

This was a participant observation exercise whereby the researcher and assistants observed the nurses as they administered oral medicines to the patients and later marked in an observation checklist.

Table 25 indicates nurses' adherence to drug administration procedure. Only four steps out of the stipulated seventeen steps were adhered to by all the nurses observed. These included:

- Taking the treatment sheet, reading the patient's name and IPNo. and confirming by calling patient's name to ensure he/she is the right patient

- Reading the whole treatment sheet noting the drugs that are due to be given, according to the time and date
- Confirming the right patient by name before giving the medicine
- Recording all the antibiotics and other drugs in the patient's notes as he/she gives them

Some of the steps were only followed when the drugs were being administered to the abandoned children or those who didn't have parents. These included the following steps; Measuring the medicine at eye level, taking the medicine to the patient and making sure the patient swallows the medicine in his/her presence.

There were steps that were not done at all. These included; washing of hands, noting of any contraindications and side effects and using different containers for the patients who were taking more than one medicine.

Table 5.25: Percentage Distribution of the Nurses' Adherence to Oral Drug Administration

Procedure (n=40)

PROCEDURE	DONE CONSISTENTLY (%)	DONE OCCASSIONAL LY (%)	NOT DONE (%)
Explains the procedure to the patient and guardian	2.5	12.5	85
Washes hands and dries them	0	0	100
Takes the treatment sheet, reads the patient's name and NO and confirms by calling patient's name to ensure he the right patient	100	0	0
Reads the whole treatment sheet noting the drugs that are to be given, according to the time and date	100	0	0
Notes any contraindications, side effects, drug reaction, drug interactions	0	0	100
Reads the prescription against the containers, notes the messages on the prescription and on the container	65	25	10
Calculates the amount of drug to be given	0	30	70
Removes the cork/cap and pours the drug in the medicine measure	100	0	0
Measures the medicine at eye level	0	15	85
If patient is getting more than one mixture uses a separate container for each mixture	0	0	100
Takes medicine to the patient	0	15	85
Checks the dose, date and time against the prescription before giving it to the patient	0	0	100
Confirms the right patient by name before giving the medicine	100	0	0
Makes sure the patient swallows the medicine in his/her presence	0	15	85
Records all the antibiotics and other drugs in the patient's notes as he/she gives them	100	0	0
Leaves the patient in comfortable position	0	15	85

The study further established that on measurement of the syrup medications, the amount of drug given depended upon the size of spoon the patient had and also the number of drugs he/she was getting. It was observed that for the patients getting more than one drug, the drugs would be measured in the same spoon or be mixed in a cup. For medicines that were in the form of tablets the right dosages were being given.

4.3.7 Challenges

All the 78 nurses acknowledged that there were challenges that faced them while providing nursing care to the children in the ward. The challenges identified included:

- Overwhelming numbers of patients (overcrowding, increased number of patients – 100%
- Shortage of nursing staff – 100%
- Shortage of equipment – 67.1%
- Poor pay therefore low motivation 51.3%
- Increased numbers of abandoned children - 40.1%
- The children change condition to worse very fast – 12.8%
- Some parents/guardians are ignorant – 10.3%
- At times children do not want to be left alone in the ward – 7.7%
- Most of the parents/guardians are poor – 6.4%
- Absconding parents/guardians – 6.4%
- Difficult in measuring paediatric dosages – 3.8%
- Decline of parents to consent with the management modalities of their children – 2.6%
- Some parents/guardians do not appreciate the work the nurses do rather they think that the nurses offer little help – 2.6%
- Some parents/guardians have poor compliance and do not support their children in therapy - 1.3%
- Sometimes they nurse both the child and parent/guardian – 1.3%
- Some children come in when they are very sick hence increasing the mortality – 1.3%
- Stress from seniors – 1.3%
- Delay of specialists in coming to review patients with special problems – 1.3%

All the nurses indicated that they have not been able to effectively deal with the challenges. They have applied the following strategies in trying to overcoming them:

- Trying to counsel the parents/guardians and addressing the contributing factors where possible – 15.7%
- Improvising on what is available – 14.3%
- Doing what is necessary to the patient and leaving the rest – 14.3%
- Providing health education to the parents/guardians – 8.6%
- Assuming and taking shortcut – 4.3%
- Taking a lot of time to calculate the dosages and dilution of the drugs – 2.9%
- Forwarding the long stay discharges to the credit department – 2.9%
- They go home with a lot of stress and sleep – 1.4%
- Sharing their frustrations with their seniors -1.4%
- .Team work with the rest of the nurses – 1.4%
- Making sure things are done in time – 1.4%
- By the grace of God – 1.4%

4.3.8 Suggestions for improvement

The following are the suggestions that the nurses gave for improving the quality of nursing care:

- Employment of more nurses son as to achieve the NCK prescribed nurse-patient ratio of 1:6 and emphasize on primary nursing -78.6%
- Availing the required supplies and equipment – 47.1%
- Better pay and boosting of their morale – 27.1%
- Provide regular and relevant continuing nursing education – 18.6%
- Decongest the patients in the wards so that there is one child per a bed or cot – 12.9%

- Training specialized nurses to work in special areas like paediatrics – 8.6%
- Proper filtering of the patients as KNH is a referral hospital – 7.1%
- Increase the number of paediatric wards – 7.1%
- Relief nurses of the non-nursing duties – 4.3%
- Emphasize on health education to the children's relatives – 4.3
- Provide a conducive working environment – 2.9%
- Replacement of the nurses who have died or retired – 2.9%
- Quick placement of abandoned children in homes
- Open forums for the evaluation of the nursing care provided
- Have a ward for communicable and infectious diseases – 2.9%
- Immunizations to be given daily and not on specific days – 1.4%
- Emphasize on application of the nursing process – 1.4%
- Exemption of children less than five years from paying – 1.4%
- managers to be team players – 1.4%
- Encourage parents/guardians of children aged more than three years not to stay with the children the ward – 1.4%

4.4 RESULTS FOR THE NURSE IN-CHARGES

Four nurse in-charges were recruited for the study.

4.4.1 Socio-Demographic Characteristics of the Nurse In-charges

All the nurse in-charges for the four wards under study were females and aged over 40 years. Three of them were married and one was widowed. The research established that they were all diploma level registered nurses and had done post basic diploma courses. One of them had done intensive

care nursing (ICN) and neonatal nursing whereas the others had done midwifery. None of them had done paediatric nursing.

4.4.2 Staffing

From the nurse in-charges' response, the total number of nurses working in the paediatric medical wards was 96 giving an average of 24 nurses per ward. The distribution of the nurses however ranged between 21 and 26. All the nurse in-charges indicated that none of their nursing staff had undergone some specialized training in paediatric nursing.

4.4.3 Nurse-Patient Ratio

The average nurse patient ratio per a shift was indicated to range between **1: 20** and **1: 35**.

4.4.4 Orientation of New Nurses

All the nurse in-charges indicated that they orientated all new nursing staff posted to their wards. With regard to content of orientation, all of them indicated that they took the nurses round the whole ward. Three of the nurse in-charges pointed out that they informed them about the common conditions and their management whereas only one introduced them to their expected duties. Other areas covered included: admission criteria (1), introduction to members of staff (1), hospital departments (other areas that the ward uses) (2) and what is expected of the nurse according to his/her cadre (1) (Table 26)

Table 26: Nurse in- charges' response on content of orientation

Content of orientation	Frequency
Taking them round the whole ward	4
Common conditions and their management	3
Hospital departments	2
Admission criteria	1
Introduction to members of staff	1
Duties	1
What is expected of the nurse according to his/her cadre	1

All the nurse in-charges indicated that they did not have a standardized document for orientating the nurses. The only available tool as indicated by one of them was the preceptor guidelines.

4.4.5 Daily Nursing Procedures

All the 4 nurse in-charges indicated administration of drugs as one the procedures that was performed on daily basis. Other procedures that were identified included: bed making (1), documenting in the cardex (1), taking of vital signs (3), infection control (1), feeding (NG-tube and the malnourished children) (2), bathing (1) and giving of health education (2). (Table 27).

Table 27: Nurse in-charges' response on daily nursing procedures

Procedure	Frequency
Administration of drugs	4
Taking of vital signs	3
Feeding	2
Health education	2
Wound dressing	2
Documenting in the cardex	1
Bathing	1
Bed making	1
Infection control	1

To ensure that these procedures were carried out, they assigned each nurse a specific task or specific patients to take care of, provided the necessary equipment and supplies and employed close monitoring.

4.4.4 Challenges

The nurse in-charges identified the following challenges in the day-to-day nursing care of the patients in the ward:

- Overwhelming number of patients with a very low nurse – patient ratio -4
- Shortage of supplies and equipment - 4
- Poor parents who are not able to clear hospital bills - 4
- Assignment of non-nursing duties - 2

To cope with the challenges, they improvise and make use of what is available including requesting the nurses not to take their leaves and giving them locums.

4.4.5 Suggestions for Improvement

Just like the nurses, the nurse in-charges had the following suggestions for improvement of the quality of nursing care:

- Recruit more nurses to achieve the NCK stipulated nurse: patient ratio of 1:6 - 4
- Provision of enough equipment – 4
- Improve staff motivation and appreciation of their services - 4
- Exemption of children under five years from paying and this would ease congestion in the wards - 4
- Review of the admission policy to ensure that KNH to remains a referral hospital - 3
- More commitment from both nurses and doctors- 1

Chapter Five

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

6.1 DISCUSSION

Socio-Demographic Characteristics

a) The children

The survey showed that the majority of the children who participated in the study were aged less than one year. This is in line with many studies done world wide⁷ and the locally¹⁶

The number of male children admitted to the wards during the entire period of the study was found to be higher than that of females and therefore constituted the majority in the selected sample. This is because they are more susceptible to diseases due to genetic predisposition especially in the first two years of life than their female counterparts. As indicated in table 1, by the third year of life, the number of male children affected is almost equal to that of female children.

With regard to the birth order of the children, the majority were first-borns. This would be attributed to their parents'/ guardians' inexperience and knowledge deficit on how to care for these first children at home. This situation increases the risk of the children getting the acute and preventable medical conditions.

The study established that majority of the children had not been admitted before. The low incidents of re-admissions would be due to the fact that most of the children first borns. Other reasons are due to either improved health conditions as the parents/guardians would have gained knowledge and experience during the previous admission or utilization of other health facilities due to a high level of dissatisfaction with the nursing care received. The latter case is corroborated by studies which

have established that the return of parents/guardians to a health facility is dependent upon their satisfaction with the nursing care offered to them and their children³.

The study further established that over 80% of the children were from Nairobi and Central provinces majority of whom were from the low income residential estates. It was however surprising to find that the majority of the patients from Nairobi were from Eastlands as opposed to southlands whereby Kibera which is the largest slum and nearest to KNH is situated. This would be because of either an outbreak of the conditions in Eastlands or lack of other health facilities or projects Eastlands as compared to Southlands. Many studies have indicated that the status of one's health is related to the level of income and hence the high prevalence of the conditions among this class of people⁴⁰. Low standards of hygiene would also be a contributory factor. The high numbers of patients from Nairobi province would be due to the parents'/guardians' preference of KNH to other health facilities in Nairobi.

The acute and preventable medical conditions were found to cause more than 80% of the admissions among the under fives. This is consistent with the findings documented by MOH/WHO/ UNICEF¹⁵. Pneumonia was found to be the leading. This is similar to the findings by Victoria et al⁴¹. This was followed by malnutrition and gastro-enteritis. The Kenya KDHS 2003¹⁶ and MOH/WHO/ UNICEF⁴⁰ reveal the same trend countrywide and many of the developing countries respectively. A local study by Magadi¹⁷ done in Nyanza Province also showed the same trend. Other studies with similar findings include Sullivan's documentation on Global Child Health¹⁰, and WHO¹¹. The author thus acknowledges that these acute treatable and preventable medical conditions remain a great threat to the health of the under fives.

b) The Parents/Guardians

The study established that the majority of the parents/ guardians were aged between fifteen and twenty five years. This compares closely with the findings by Obimbo whereby in her study, the median age of the mothers was 22 years⁴². This age range being the starting point of most people's reproductive career, it was found to be closely related to the birth order of the children, most of whom were first-borns.

Most of the parents/ guardians who participated in the study were found to be mothers. This is similar to the findings in a study by Seid et al on parents' perceptions of primary care in which 77% of the respondents were females⁴³. This is because most of the children were in their breastfeeding ages as seen from their socio-demographic characteristics. It would also be due to fact that care of children is a role of mothers and by virtue of the fact that most were house wives meaning that they were economically dependent upon their husbands who would be working.

The study established that the majority of the respondents had attained primary level of education. For those who were married, most of them were house wives. This explains why majority of the patients were from the low income areas and the increased prevalence of these conditions.

Therefore, considering the socio-demographic characteristics of both the parents/guardians and the children, the study observes that the age of the child, the birth-order, maternal level of education and occupation have an influence on the child's health. This consistent with local studies carried out by Obimbo⁴³, Magadi¹³, and the KDHS, 2003¹⁶.

c) The Nurses

The study established that the majority of the nurses in the pediatric medical wards are aged between 30 and 39 years. It was further revealed that females constitute the majority of the nursing staff. This scenario is in agreement with the history of nursing whereby from the time of Florence Nightingale, nursing has always been looked at as a feminine profession^{44, 45}. It was further established that majority of the nurses are married, a finding that is consistent with the society's expectations given their age.

With regard to the level of training of nurses, the survey found out that there were three levels which included certificate, diploma and degree. The majority of the nurses working in the paediatric medical wards had certificate level of nursing training whereas only 6.4% had attained degree level of training. None of the nurses had obtained any special training in paediatric nursing and therefore they were utilizing the knowledge they obtained in their basic training to nurse the children. Despite having attended CME sessions, they had not received any information relevant to child nursing therefore they were still utilizing the knowledge they gained in their basic training. This is consistent with the findings by Obimbo in her study on the nurses' knowledge of cord care⁴².

The study established that the majority of the nurses have worked for more than 10 years since their certification to practise nursing. With regard to the departments in which they have worked, most of them had worked in other departments prior to their posting in the paediatric medical wards. The study further revealed that majority of the nurses had worked in the paediatric wards for at least six years. The nurses' experience was found not to have any relationship with the quality of nursing they offered in respect to parent/guardian involvement, performance of daily nursing procedures and adherence to the laid down procedures of drug administration. This was attributed to the lack of

proper and comprehensive orientation upon reporting in the wards as new staffs and high nurse – patient ratio (1:30) as compared to the NCK stipulated ratio of 1:6.

d) The Nurse In-Charges

The study established that all the four nurse in-charges are aged over 40 years with three of them being married and one a widow. They were all diploma level trained nurses with various post-basic diploma courses but none had done any paediatric nursing course. Lack of training in paediatric nursing would explain the gaps observed in their knowledge on daily nursing procedures and the content of the orientation they gave to nurses newly posted to their wards.

Daily Nursing Activities

Both the nurse in-charges and nurses had variant knowledge on the daily nursing activities that should be carried out in their wards. From the response made by the nurse in-charges, the nurses and the parents/guardians, the survey established that in practice; most of the daily activities were never carried out. Among the nursing procedures, only administration of drugs was carried out by almost all the nurses. This concurs with the comments by Siringi in which he indicated that most healthcare providers in government health facilities in Kenya do not carry out required tasks³⁷. Inadequate performance of the daily activities would be attributed to increased patient load and congestion, high nurse – patient ratio (1:30) as compared to the NCK stipulated ratio of 1:6, lack of supplies and equipment and shortage of staff as enlisted by all the nurses and nurse in-charges who participated in the study.

Majority of the parents/guardians did not know their children's health problems or any other community services in proximity to their residence that they could make use of. Any knowledge

they had, was from their own observations and interpretations or from non-health workers. This is a clear indication that the nurses did not provide health education or if they did, it was not relevant. In view of this, there is a likelihood of continued increase in the prevalence of these conditions as the parents may not be having the appropriate knowledge on how to manage and prevent their children's health problems (tables 7 and 8 and figures 8-11). The findings further indicate that nurses do and even doctors do not apply the IMCI principles which emphasize health education and counseling. As established by Obimbo, only mothers who had been taught by health workers had the right knowledge⁴² This is attributable to the high nurse-patient ratio (1:30)

Nurse-Parent/Guardian Interaction

It is desirable that majority of the nurses, constituting 74.1% of the respondents, involved the parents in the care of the children in the wards. The involvement of parents in planning the care of children has been emphasized both locally and globally^{6, 21, 22, 44}. According to Dr. Mwanda, involvement of parents in key decision making processes is of paramount importance particularly because parents will continue to care for the child after discharge⁴⁴. In this study, it was however disappointing to realize that the mode of involvement was not interactive as the nurses assumed that the parents had no knowledge and therefore instructed them on what to do or just answered their questions. This was noted to cut across all the cadres of professional training whereby the mode of involvement remained the same. Further, even those who had attended continuing education sessions echoed to same response. Parents/ guardians, on the same note, acknowledged that their mode of involvement was by being told what to do or by giving the history of the child. The inappropriate involvement would be attributed to the lack of knowledge on the part of the nurses, lack of established standards of care as indicated by the nurse in-charges that they didn't have standard tools for orientation and the high nurse-patient ratio.

Studies done in various settings in America established that the extent to which nurses involved parents in making decisions about their children's care and the manner in which this was achieved varied considerably⁴⁵. The low level of interaction has also been echoed by Dr. Mwanda in that parent involvement in making decisions on the management of childhood conditions is usually overlooked⁴⁴. This low level of nurse- parent interaction is attributed to the lack of specialized training in paediatric nursing as revealed that both the nurse in-charges and the service nurses had not been trained on paediatric nursing. The lack of specialized training is further attributed to have caused the lack of any association between parent/guardian involvement and the nurse's level of training, CME attendance, work experience and orientation as they were not specific to child nursing.

The low level of interaction is also attributable to lack knowledge by the parents/guardians on their expectations while in the ward. This is because majority of the parents/guardians did not receive any orientation on the day of admission and also were not given health education about their children's health problems. This is similar to the findings by Maureen in which two thirds of the parents interviewed were not shown the facilities of the unit⁴⁶.

Adherence to Drug administration Procedure

Nurses of all cadres did not adhere to the Nursing Council of Kenya's laid down procedure of oral drug administration. Despite the fact that the procedure was the one that most nurses performed on a daily basis, very important and cardinal requirements were not adhered to. These included steps like explaining the procedure. Only 50.4% of the parents / guardians knew the drugs their children were taking and of these only 12.4% had been informed by nurses. Another omission was on measurement of right dosage of drug whereby the nurses were observed not to be keen. On this

aspect, similar results were obtained in studies done in the paediatric care units in U.S.A and the Royal Hospital for sick children in which it was established that 60% of the drug errors were made by nurses, the most common being giving the wrong dosage^{34,47}. The findings further agree with Siringi's findings that health care providers in public health facilities in Kenya do not follow laid down procedures³⁷. It is thus unfortunate that even the higher level trained nurses, who are expected to be exemplary to the other lower level nurses, do not follow the laid down procedures. It is therefore evident that the parents/ guardians are not likely to give medicines to their children in a proper way upon discharge as they will follow what they observed from nurses in the wards.

Quality of Nursing Care

Results of the study show that that the quality of nursing care provided by different categories of nurses is not only the same but also sub-optimal. Non- adherence to the laid down procedures for the administration of oral drugs, non-performance of the expected daily nursing procedures and inadequate involvement of parents/guardians in the planning of nursing care are all pointers of "not so good" quality nursing care. Further, the suggestions by parents/guardians on what can be done to better satisfy them further indicate that the quality of nursing care was not satisfactory. The suggestions were to the effect that nurses should:

- should be polite
- be talking more to the patient
- establish rapport with the clients
- have the heart to help
- should not abuse the parents
- not reply badly when called
- explain the child's problem and what is required in management

- Settle the parents when they come to the ward and not the parents to look for beds.
- should give immediate attention and give patients a chance to talk and pray for their children
- Should wake up and keep to their calling and not work like they are forced or are dealing with animals.

The comments thus clearly indicate poor communication between nurses and parents and hence parental dissatisfaction. These comments are similar to those established by Moira in which “not so good” quality was described as care that is delivered in an impersonal manner by distant staff who did not know or involve patients⁴⁸.

From the findings of the study it is therefore concluded that the quality of nursing care provided to children with acute treatable and preventable conditions admitted at KNH is sub-optimal. The factors contributing to this include: high nurse-patient ratio, lack of standards for practice, lack of specific training and refresher courses related to paediatric nursing, poor remuneration and low motivation and laxity on the part of the nurses on adherence to laid down procedures. These findings are consistent with the concern raised by WHO during the celebrations of the World Health Day in 1998 whereby it was indicated that substandard care is often the result of staff being overworked and not receiving adequate training or refresher courses to upgrade their skills⁴⁹.

Following the findings of the study, the hypothesis that there is no significant relationship between the nurse’s level of nursing qualification and the quality of nursing care provided is thus accepted ($p=0.593$ at 0.05 level of significance).

6.2 CONCLUSIONS

The study came up with the following conclusions:

1. The prevalence of the acute preventable and treatable medical conditions at KNH is 88.6% over a period of one month. The leading conditions include Pneumonia, malnutrition and gastro-enteritis. The most affected children are males, first-borns, of age less than one year and from parents of low socio-economic backgrounds. More than eighty percent of the children admitted to the paediatric medical wards at KNH are from Nairobi province.
2. Three categories of nurses work in the paediatric medical wards i.e. certificate, diploma and degree level trained nurses. Majority of the nurses are trained at certificate level and most have attended CME sessions but none has been specially trained in paediatric nursing. The nurses are orientated when newly deployed in the wards but the orientation is not comprehensive enough as there are no standard tools for orientation or practice.
3. There is a low nurse-patient ratio (1:30) as compared to the NCK stipulated ratio of 1:6.
4. Nurses interact with parents/guardians by involving them in the implementation of care but they don't involve them in the decision making process or when planning the care.

5. Majority of the nurses don't carry out the expected daily nursing activities. Only drug administration is carried out by most of the nurses.
6. All nurses do not adhere to laid down procedures on administration of oral medications.
7. The level of nursing training did not have a significant influence on the quality of nursing care provided.

6.3 RECOMMENDATIONS

From the findings of this study it is recommended that:

1. There is need to emphasize on the utilization of the Integrated Management of Childhood Illnesses (IMCI) so as to reduce the morbidity of the preventable and treatable medical conditions.
2. Nurses working in the paediatric medical wards be given specialized education on paediatric nursing. It is also important that standards of paediatric nursing be developed and provided to all nurses working in the paediatric wards.
3. More nurses be recruited so as to meet the required nurse-patient ratio of 1:6.
4. Mechanisms be put in place to ensure that all daily nursing procedures are executed:
5. Emphasis be laid on adherence to laid down procedures of oral drug administration.

Recommendations for Further Research

1. A study on the utilization of the other health facilities in Nairobi be carried out.
2. A study be carried out to compare the quality of nursing care provided by trained paediatric nurses and those not trained in paediatric nursing.

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APPENDIX 1

PARENT/GUARDIAN QUESTIONNAIRE

SERIAL NO.

Instructions

- Please don't write your name on the questionnaire
- Please put a tick (✓) in the box next to the right response
- Where no choices are given, please write /fill in the appropriate answer

DEMOGRAPHIC DATA

A. Parent/Guardian

Age: 15-25 26-35 >35

Sex: Male Female

Level of education: Primary Secondary Other (specify).....

Marital status: Married Single Divorced Other (specify).....

Occupation.....

Residence.....

Relationship with child.....

B. Child

IPNO.....

Age.....

Sex.....

Birth order.....

Diagnosis.....

Date of admission.....

Admission Process

1. Has this child been admitted to hospital before?

Yes No

2. On the day the child was admitted to the ward, did the nurse orientate you on the available facilities in the ward

Yes No

Knowledge about child' health condition

3. Do you know your child's sickness?

Yes No

If yes who informed you?

Doctor Nurse Other (specify)

4. Do you understand the cause of your child's sickness?

Yes No

If yes who explained it to you?

Doctor Nurse Other (specify).....

5. Do you know how to prevent your child's disease?

Yes No

If yes who provided you with the information?

Doctor Nurse Other (specify)

6. Have you been informed on how to care for the child at home?

Yes No

If yes who provided you with the information

Doctor Nurse

Other (specify)

7. Do you know the danger signs that will help you seek medical help in good time?

Yes No

If yes who provided you with the information

Doctor Nurse Other (specify).....

8. Do you know any available facilities in your community that you can use incase of need?

Yes No

If yes who provided you with the information?

Doctor Nurse Other (specify).....

Daily nursing procedures

9. What services do you or your child receive from the nurse on a daily basis?

Administration of drugs <input type="checkbox"/>	Taking of vital signs <input type="checkbox"/>
Health education <input type="checkbox"/>	Nutritional care <input type="checkbox"/>
Hygiene <input type="checkbox"/>	Other (specify)

10. Have you been receiving attention or assistance from the nurse when you are in need?

Yes No

If yes how long does it take to be attended to?

- Within 30 minutes
- 30-60 minutes
- 1-2 hours
- Have to give a reminder

11. Does the nurse involve you in making decisions about your child's care?

Yes No

If yes please indicate how you are involved:

.....
.....

Drug administration

12. Do you know the medicines your child is receiving?

Yes No

If yes who informed you?

Doctor Nurse Read from the notes

Other (specify).....

13. Who gives oral medicines to your child?

Doctor Nurse Self Other (specify).....

14. Is your child being given syrups for treatment?

Yes No

If yes what is used to measure the syrup?

Table spoon Teaspoon
Syringe Calibrated measure

Other (specify).....

15. Do you know the likely effects of the medicine your child is taking can have on him/her?

Yes No

If yes who informed you?

Doctor Nurse Other (specify).....

Suggestions for improvement of nursing care

16. Do you have any suggestions on how we can improve our nursing services to satisfy you better?

Yes

No

If yes please indicate them

.....
.....

APPENDIX 2

OBSERVATION CHECKLIST FOR ADMINISTRATION OF ORAL MEDICINES

PROCEDURE	DONE CONSISTENTLY	DONE OCCASIONALLY	NOT DONE	COMMENTS
Explains the procedure to the patient and guardian				
Washes hands and dries them				
Takes the treatment sheet, reads the patient's name and IPNO and confirms by calling patient's name to ensure he is the right patient				
Leads the whole treatment sheet noting the drugs that are due to be given, according to the time and date				
Notes any contraindications, side effects, drug reaction, drug interactions				
Leads the prescription against the containers, notes the dosages on the prescription and on the container				
Calculates the amount of drug to be given				
Removes the cork/cap and pours the drug in the medicine measure				
Measures the medicine at eye level				
If patient is getting more than one mixture uses a separate container for each mixture				
Takes medicine to the patient				
Checks the dose, date and time against the prescription before giving it to the patient				
Confirms the right patient by name before giving the medicine				
Make sure the patient swallows the medicine in his/her presence				
Records all the antibiotics and other drugs in the patient's notes as he/she gives them				
Records drugs given in the drug register				
Leaves the patient in comfortable position				

APPENDIX 3

NURSES' QUESTIONNAIRE

Serial No.

Instructions

- Please don't write your name on the questionnaire
- Please put a tick (✓) in the box next to the right response
- Where no choices are given, please write /fill in the appropriate answer

Demographic data

Designation.....

Age.....

Sex.....

Level of education.....

Professional qualifications.....

Terms of employment.....

Marital status.....

Working experience

1. How long have you worked as a nurse?

Less than 5 years 5-10 years

10-15 years More than 15 years

2. Apart from Paediatrics department, have you worked in any other departments?

Yes No

If yes indicate the other departments in which you have worked

.....

.....

.....

3. How long have you been working in paediatric wards?

<1 year 1-3 years 4-6 years >6 years

4. When you reported to this ward for the first time were you given orientation?

Yes No

If yes please indicate the contents of the orientation

.....
.....
.....

5. Since you started working in this ward have attended any continuing education sessions?

Yes No

If yes please indicate the subjects that were covered in those sessions

.....
.....

Do you have any training in paediatric nursing?

Yes No

If yes please indicate the type of training.....

.....
.....

Daily nursing activities

6. Are there nursing activities that must be carried out everyday in the paediatric medical ward?

Yes No

If yes which ones?

.....

.....

.....

Nurse-Patient interaction

7. Do you involve the guardians/parents when planning for the nursing care of the children admitted to the ward?

Yes

No

If yes how do you involve them?

.....

.....

.....

Suggestions for improvement

8. While working with the paediatric patients, have you faced any challenges?

Yes

No

If yes which ones?

.....

.....

How have you overcome these challenges?

.....

.....

9. In what way do you think the quality of nursing care can be improved?

.....

.....

APPENDIX 4

QUESTIONNAIRE FOR NURSE INCHARGES

Instructions

- Please don't write your name on the questionnaire
- Please put a tick (✓) in the box next to the right response
- Where no choices are given, please write /fill in the appropriate answer

Demographic data

Designation.....

Age.....

Level of education.....

Professional qualifications.....

Terms of employment.....

Marital status.....

Administrative issues

1. How many nurses are working in your ward?.....
2. What is the average nurse-patient ratio per a shift?.....
3. Among these nurses how many have been trained in paediatric nursing?.....
4. When new nurses are posted to your ward do you orientate them?

Yes

No

If yes please indicate the content of your orientation

.....

.....

5. Do you have standardized tools that you use for orientation?

Yes

No

If yes please give copies or indicate which tool.....

Daily nursing activities

6. Which nursing procedures must be carried out on a daily basis in your ward?

.....
.....
.....

What mechanisms have you put in place to ensure that these activities are carried out?

.....
.....
.....

Suggestions for improvement

7. Which challenges have you encountered as the in-charge of this ward?

.....
.....

How have you overcome them?

.....
.....

8. What do you feel can be done to improve the quality of nursing care in your ward?

.....
.....
.....

APPENDIX 5

CONSENT FOR PARENTS/ GUARDIANS

I am Drusilla G.M. Makworo from the School of Nursing Sciences, University of Nairobi, is pursuing an MSc. Degree programme. I am conducting a Study on the nursing care of acute and preventable medical conditions in children age 0-5 years. The study is part of the requirement for the master's degree. The results will be used to devise ways of improving the quality of nursing care of these children while in the ward and at home after discharge. I am therefore requesting you to participate. This is completely voluntary and you will not be compelled to answer any question you are uncomfortable with. You will suffer no consequences or risks by your decision to participate or not to participate. Everything will be held in strict confidence and your name is not required in the form or the questionnaire.

Incase you have any queries you can contact the principal investigator;

Makworo Drusilla G. M,
School of Nursing Sciences
University of Nairobi
P.O Box 19679- Nairobi

Or The Chairman, Kenyatta National Hospital Research and Ethics Committee, P.O Box 20723, Nairobi. Tel.726300

Your honest answers and co-operation will be highly appreciated.

I have been explained the purpose of the study and I hereby accept to take part in this study

Signature-----

Date-----

Participant

Signature -----

Date-----

Research Assistant

APPENDIX 6

CONSENT FOR NURSES

I am Drusilla G.M. Makworo from the School of Nursing Sciences University of Nairobi pursuing a MSc. Degree programme. I am conducting a Study on the nursing care of acute treatable and preventable medical conditions in children age 0-5 years. The study is part of the requirement for the master’s degree. The results will be used to review and develop policies guiding the practice of paediatric nursing care. I am therefore requesting you to participate. This is completely voluntary and you will not be compelled to answer any question you are uncomfortable with. Everything will be held in strict confidence and your name is not required in the form or the questionnaire.

Incase you have any queries you can contact the principal investigator;

Makworo Drusilla G. M,
School of Nursing Sciences
University of Nairobi
P.O Box 19679- Nairobi

UNIVERSITY OF NAIROBI
MEDICAL LIBRARY

Or The Chairman, Kenyatta National Hospital Research and Ethics Committee, P.O Box 20723,Nairobi. Tel.726300

Your honest answers and co-operation will be highly appreciated.

I have been explained the purpose of the study and I hereby accept to take part in this study

Signature-----

Date-----

Participant

Signature -----

Date-----

Research Assistant

APPENDIX 7

CONSENT FOR NURSE - INCHARGES

I am Drusilla G.M. Makworo from the School of Nursing Sciences University of Nairobi pursuing a MSc. Degree programme. I am conducting a Study on the nursing care of acute treatable and preventable medical conditions in children age 0-5 years. The study is part of the requirement for the master's degree. The results will be used to review and develop policies guiding the practice of paediatric nursing care, used for learning purposes, stimulate more research and the recommendations will be used to device ways of improving the quality of nursing care. I am therefore requesting you to participate. This is completely voluntary and you will not be compelled to answer any question you are uncomfortable with. Everything will be held in strict confidence and your name is not required in the form or the questionnaire.

Incase you have any queries you can contact the principal investigator;

Makworo Drusilla G. M,
School of Nursing Sciences
University of Nairobi
P.O Box 19679- Nairobi

Or The Chairman, Kenyatta National Hospital Research and Ethics Committee, P.O Box 20723, Nairobi. Tel.726300

Your honest answers and co-operation will be highly appreciated.

I have been explained the purpose of the study and I hereby accept to take part in this study

Signature-----

Date-----

Participant

Signature -----

Date-----

Research Assistant



KENYATTA NATIONAL HOSPITAL

Hospital Rd. along, Ngong Rd.

P.O. Box 20723, Nairobi.

Tel: 726300-9

Fax: 725272

Telegrams: "MEDSUP", Nairobi.

Email: KNHplan@Ken.Healthnet.org

Date: 18th April 2006

Ref: KNH-ERC/ 01/ 3434

Drusilla G. Makworo
Dept. of Nursing Sciences
Faculty of Medicine
University of Nairobi

Dear Drusilla

RESEARCH PROPOSAL: "QUALITY OF NURSING CARE OF PAEDIATRIC INPATIENTS (AGE 0-5 YEARS) WITH ACUTE PREVENTABLE AND TREATABLE MEDICAL CONDITIONS AT K.N.H." (P7/01/2006)

This is to inform you that the Kenyatta National Hospital Ethics and Research Committee has reviewed and **approved** revised version of your above cited research proposal for the period 18th April 2006 – 17th April 2007.

You will be required to request for a renewal of the approval if you intend to continue with the study beyond the deadline given.

On behalf of the Committee, I wish you fruitful research and look forward to receiving a summary of the research findings upon completion of the study.

This information will form part of database that will be consulted in future when processing related research study so as to minimize chances of study duplication.

Yours sincerely

PROF A N GUANTAI
SECRETARY, KNH-ERC

c.c. Prof. K.M.Bhatt, Chairperson, KNH-ERC
The Deputy Director CS, KNH
The Dean, Faculty of Medicine, UON
The Chairman, Dept. of Nursing Sciences, UON
The HOD, Medical Records, KNH
Supervisors: Dr. Blasio O. Omuga, Dept. of Nursing Sciences, UON
Mrs. Margaret N. Muiva, Dept. of Nursing Sciences, UON
Mrs. Eunice Odhiambo, Dept. of Nursing, UON
Dr. Ahmed M.R. Laving

MINISTRY OF SCIENCE & TECHNOLOGY

Telegrams: "SCIENCE TEC", Nairobi

Fax No.

Telephone No: 318581

When replying please quote

MOS&T 13/001/36C/ 244/2



REPUBLIC OF KENYA

JOGOO HOUSE "B"
HARAMBEE AVENUE
P.O. Box 60209-00200
NAIROBI
KENYA

25th April 2006

Drusilla Gekondo Makworo
University of Nairobi
P.O. Box 30197
NAIROBI

Dear Madam

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on '*Quality of Nursing Care of Paediatric Inpatients (Age 0-5) years with acute preventable and treatable medical conditions at Kenyatta National Hospital*'

I am pleased to inform you that you have been authorized to carry out research at the Kenyatta National Hospital for a period ending 30th August 2006.

You are advised to report to the Director, Kenyatta National Hospital before commencing your research project.

On completion of your research, you are expected to submit two copies of your research report to this office.

Yours faithfully



B. O. ADEWA

FOR: PERMANENT SECRETARY

Copy to: The Director
Kenyatta National Hospital
NAIROBI