

**A SURVEY OF KNOWLEDGE, ATTITUDE AND PRACTICE OF
ANALGESIC USE IN ACCIDENT AND EMERGENCY
DEPARTMENT IN KENYATTA NATIONAL HOSPITAL.**

**A Dissertation Presented In Part Fulfillment Of The Requirements
For The Award Of Master Of Medicine Degree In Anaesthesia,
University Of Nairobi.**

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2012

DECLARATION

I declare that this dissertation is my original work and has not been submitted for a degree award in any university.

.....

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DEDICATION

This research is dedicated to my family-The Gathiris, my daughter-Zenani Nyambura and my soul mate-Ephraim Muiruri Irungu for their support which was indispensable for the success and completion of this study.

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ABBREVIATIONS

BAEM-British Association of Emergency Medicine

COX-Cyclooxygenase

IV-Intravenous

IM-Intramuscular

JCAHO-Joint Commission for the Accreditation of Healthcare Organizations

KNH-Kenyatta National Hospital

MAOI-Monoamine oxidase inhibitor

MOP-Mu opioid

M3G-Morphine-3-glucuronide

M6G-Morphine-6-glucuronide

SC-subcutaneous

SHO-Senior House Officers

WHO-World Health Organisation

SUMMARY

Introduction:

Internationally, there is proof that there is oligoanalgesia in the accident and emergency department. It was therefore imperative to find out if the nurses and doctors working in the accident and emergency department at the KNH, were equipped in the area of provision of analgesia.

Objective: To establish knowledge, attitudes and practice of analgesic use amongst staff working in accident and emergency department in Kenyatta National Hospital.

Setting: The research was carried out in Kenyatta National Hospital's accident and emergency department.

Design: This was a cross-sectional descriptive analytical study involving the use of an anonymous questionnaire administered among medical staff working in Kenyatta National Hospital's accident and emergency department. The questionnaire was accompanied by a consent form to be signed by the study participants. The questionnaire was used to determine the quality of pain management given to patients.

Methodology:

This study was carried out over a one month period. Data was collected from the consenting nurses and doctors with the use of a questionnaire. Upon completion, the questionnaires were collected on the same day.

The information from the questionnaires was verified, entered and analyzed using SPSS (Statistical Package for Social Studies) version 17.

Results:

This study revealed that the commonest analgesic agent used in the accident and emergency at the KNH was NSAIDs (95.4%). The commonest used route for administration of analgesics was the IM route (78%) due to ease of administration.

There was a general reluctance of administration of opioids in the accident and emergency department. In addition to this the opioids which were administered were largely given by the IM route rather than by the IV route. This demonstrated opiophobia which is the prejudice against the use of opioids.

It was identified that lack of guidelines on pain management was a hindrance to the provision of effective pain management. In addition to this, the nurses and doctors conferred that introduction of guidelines on pain management in the accident and emergency department would improve provision of analgesics for acute painful conditions.

Recommendations:

It was recommended that an objective pain rating scale be introduced in the accident and emergency department for proper pain assessment. Also regular refresher courses on analgesic use in the emergency department should be held regularly. In addition to these, guidelines on pain management should be formulated to improve provision of effective analgesia in the accident and emergency department.

1.0 INTRODUCTION

Pain is defined by the International Association for the Study of Pain (IASP) as ‘an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage.’¹

Pain has objective, physiological sensory aspects as well as subjective, emotional and psychological components.²

The term ‘nociception’ is used only to describe the neural response to traumatic or noxious stimuli. Pain is a distressing sensory and emotional experience associated to a real or potential tissue injury and described according to such damage.³

Pain is the most common presenting complaint amongst the majority of the patients seen at any accident and emergency department.

In every specialty of medicine, the commonest presenting complaint will be pain.

For example:

- Internal Medicine: Acute and chronic Chest infections, upper respiratory infections, myocardial infarction etc.
- Paediatrics: Acute chest infections, upper respiratory infections, sickle cell crises, meningitis etc.
- Surgical: Acute abdomen for example, appendicitis, intestinal obstruction, cholecystitis, others are burns victims, head injury, obstructed hernia etc.
- Obstetrics and gynaecology: ectopic pregnancies, ovarian cysts, incomplete or threatened abortions, menorrhagia etc.
- Orthopaedics: fractures of long bones-femur, tibia, fibula, Rib fractures, joint dislocation, osteoarthritis and many others.
- Dental: Gingivitis, tumours.

Pain varies extensively in descriptive quality (aching, burning, stinging, tearing, sharp or dull), intensity (weak or strong), duration and frequency .⁴

Patients with pain tend to self medicate in a bid to avoid going to hospital. When this fails, then they seek medical attention.

Kenyatta National Hospital receives all the above aforementioned conditions and many more and the numbers can be overwhelming. This in turn means that the intensity of pain of a particular patient is not monitored and he or she may not get fully relieved of the pain.

Secondly, the number of medical personnel-Doctors and nurses are not sufficient to cater for the large numbers of patients being received constantly at the accident and emergency department.

Thirdly, the drugs available at the accident and emergency department may not be the best or the most ideal therefore narrowing the choice of drug.

This study assessed the knowledge, attitude and practice of the medical personnel in the department. It took into consideration the pharmacological classification of the different types of analgesics, dosages, frequency, route of administration, determination of pain intensity, who should prescribe the analgesia and at what interval should it be reassessed.

The analgesics commonly used in the accident and emergency department are

- Non steroidal anti inflammatory drugs
- Opioids
- Non-opioid analgesic agents
- Tramadol

2.0 LITERATURE REVIEW

Durchame; Gabez and Puntillo; in 2 different studies, cited pain as the primary issue of more than 70% of patients presenting at the accident and emergency department, hence it is the most prevalent reason for attendance.^{8 /9}

A different study in 1999, sought to reveal the prevalence of pain in the emergency department and they demonstrated the undertreatment of pain in this setting. They reported that 78% of people who presented to the emergency department had pain.¹⁰

Many studies have documented that pain in the emergency department setting can be under appreciated by the medical personnel, hence often under treated. The reasons given as to why pain is commonly under recognized, under treated include difficulty in assessing severity, and the fact the patient may have difficulty in describing the pain especially if he or she is a child.¹¹

Anne-Maree also documented that the medical personnel at the accident and emergency department had inadequate knowledge of analgesic pharmacology, inadequate doses, inappropriate routes of administration and poor processes for provision of analgesics.¹²

It has also been shown by that only 60% of these patients requested for or were actually given pain relief. This shows that there are significant barriers to comprehensive pain management in pain relief.¹³

SIGNIFICANCE AND MAGNITUDE OF THE PROBLEM

Many people present in the ED for treatment and pain alleviation. The medical and nursing professions are facing accountability for effectively managing pain in the emergency patient population. The Joint Commission for the Accreditation of Healthcare Organizations (JCAHO), the agency responsible for accrediting hospitals and healthcare facilities across the United States, has identified pain management as a top priority (JCAHO, 1999).¹⁴

One of the primary goals of emergency medicine is the prompt, effective alleviation of pain. Relief of pain is increasingly being viewed as a basic human right, and thus an ethical as well as a clinical concern for health professionals.¹² Despite this, international research shows pain to be inadequately managed within the acute setting.

Medical personnel in the accident and emergency department do not adequately provide analgesia to their patients; do not meet patients' expectations in treating their pain and struggle to

change their practice regarding analgesia.¹⁵ Therefore it is important that the medical personnel in this department aggressively treat the pain.

Early analgesia for patients with pain can be provided by nurses at triage.⁶ A nurse is the first person that a patient presenting to an accident and emergency will encounter. His or her role is to perform a primary assessment and allocate a triage score depending on the severity of the patient's condition.⁶

Garbez and Puntillo recommended that documentation standards to include the use of a pain scale appropriate to the patient population served.⁹

The primary goal should be to identify and accurately assess pain and then manage it effectively and efficiently by responding to the individual needs of each patient.⁹

The tools that can be used are illustrated:(see appendix 1).

The visual analogue scale (VAS) pain score is the most commonly used tool to assess pain and it is also sensitive.¹⁶ Studies have concluded that a patient with a VAS score of 7 or more should receive analgesia.¹⁷

A study evaluating the perception of pain in the emergency department showed that both physicians and nurses gave statistically significant lower pain scores than the patient's themselves. In addition, no pain scale assessments were employed when reviewing the patients.¹⁸

These scales can be used to follow-up on the patient's pain score while still at the accident and emergency department according to a study by Miner. This helps to ensure that the patient's pain is well managed and controlled.¹⁹

Unrelieved pain is associated with a variety of potentially negative physiological outcomes including increased sympathetic outflow, peripheral vascular resistance, myocardial oxygen consumption, carbon dioxide production, hypercoagulability, reduced immunity and subsequent development of chronic pain.²⁰

Studies have shown that 56%-60% of patients with acutely painful medical and surgical conditions received no analgesia while in the accident and emergency department.²¹ 32% of patients receiving analgesia had a less than optimal dose.¹⁵

A study done in 1999 evaluated pain management practices of 305 nurses of the Emergency Nurses Association in Illinois, using a 52-item mail survey. The nurses documented that deficits in knowledge of analgesic pharmacology and lack of understanding of the terms addiction, tolerance, and dependence were barriers to treatment of pain. Additional barriers included inadequate pain assessment practices and inability to administer pain medication prior to physician evaluation.²²

Several reasons have been documented as the causes of poor management of painful conditions in the accident and emergency department. These include:

- Failure to acknowledge pain
- Failure to assess initial pain
- Failure to have pain management guidelines in the department
- Failure to document pain and to assess treatment adequacy.²¹

Literature recognizes that due to the subjective nature of pain, healthcare professionals' attitudes and beliefs contribute to undertreatment. This happens when clinicians make pain management decisions on their own belief and do not accept patient's self reporting as the gold standard.

Nash and group (1999) used focus-based interviews with 19 participants to their administration of analgesia particularly opiates. The study revealed a range of erroneous beliefs: Smaller patients needed less analgesia and that terminally ill patients should have more analgesia.⁵

Gender has been shown to influence analgesia delivery and interpretation of pain by healthcare providers.

A study done in 2002 examined the effects of pain on men and women and concluded that men had higher tolerance to pain.⁴

A survey was done to determine whether nurses thought there was a disparity in pain response between men and women. The findings indicated that nurses perceive that men experience more distress from pain, but are more likely to underreport pain. They expressed concern that nurses may unintentionally withhold analgesia based on gender bias.⁴⁴

In 2004 a study by Chong and group, found out that female patients described more pain and were perceived to have more pain male patients. They also received stronger and higher dosages of analgesia than male patients.⁴⁵

MUSCULOSKELETAL AND TRAUMA PAIN

Acute musculoskeletal pain encompasses a broad category of pain syndromes, including soft tissue injury, back pain, and extremity fractures. Although traumas occur frequently, little attention has been given to the traumatized victim in terms of pain management.⁹

The major objectives in trauma patient care are to improve tissue perfusion, minimize cell damage and anoxia-associated physiological alterations, to manage hemorrhages, and to keep the patient's life signs and neck stable.⁹

Puntillo and colleagues found clinically significant differences between nurses' and patients' pain rating scores, documenting that ED nurses underestimated the pain intensity of patients with musculoskeletal pain 95% of the time.⁹

A study by Tanabe and colleagues showed that 70% of 77 patients receiving an intervention in triage for acute musculoskeletal pain did not experience a clinically significant reduction in pain. This reflected that patients did not get adequate pain relief from the medical personnel at the accident and emergency department.²²

A lack of perception or acknowledgement by the ED staff of the patient's pain experience is one of the primary reasons pain management and sufficient pain relief are lacking in the ED setting. Initial patient evaluation is done quickly to assess for life-threatening injury or illness; then, further information is gathered and assessed according to what the physician or nurse wants to know. Patients presenting with signs consistent with acute musculoskeletal pain are typically placed in a lower triage category, placing them at risk for extended waits for pain relief.⁹

Effective pain management begins when both the patient and the healthcare provider acknowledge that pain exists and continues until the perception of satisfactory treatment by the patient. Nonpharmacologic interventions, such as splinting, rest, ice, and elevation, can be effective by augmenting acute pain management, but it is the pharmacologic interventions that are the major focus of musculoskeletal pain management in the ED.^{6,9}

The mechanism of pain for acute musculoskeletal injury lends itself to the use of an anti-inflammatory medication. Acute pain is mediated in the periphery by the release of pro-inflammatory prostaglandins, and NSAIDs inhibit the production and release of prostaglandin synthetase. When compared to opioid analgesics for acute musculoskeletal pain, NSAIDs do not cause respiratory depression, are minimally sedating, and have no abuse potential. A significant disadvantage to use of NSAIDs for acute pain management is their ceiling effect, that is, there is a dose beyond which no further analgesic effect will be obtained.^{6,9}

A study done evaluating injuries suffered by skaters revealed that fractures were associated with receiving analgesics; most physicians find it logical and reasonable to address pain from obviously painful sources. Less clear is why non-fracture musculoskeletal injuries are not approached with a similar mentality.²³

Musculoskeletal and trauma pain can be managed effectively by use of peripheral nerve blocks. They are an effective but often underused method of analgesia with few side effects. Nerve blocks do not share the systemic risks of parenteral medications. This can be done in a well equipped Accident and Emergency department.²⁴

Blavais et al however acknowledged that regional blocks have traditionally been performed blindly and require specialized equipment such as nerve stimulators that are typically not found in the emergency department. With this limitation most doctors in the emergency department

historically have not performed regional nerve blocks but with the development of ultrasound guidance, the technique has gained popularity.²⁵

Liebermann, Price et al reported that patients frequently presented to the Emergency department with hand pain due to fractures, dislocations, burns and infections. Others also present with femoral fractures. These patients require painful procedures such as suturing and debridement. Of note, these patients are frequently unfasted and might have other associated injuries.^{26, 24}

Blavais et al acknowledged that procedural sedation offers patient comfort and muscle relaxation to facilitate shoulder reduction, but was associated with risks such as hypotension, aspiration and respiratory depression. In addition to this, such patients may require preprocedural fasting, continuous haemodynamic monitoring, observation during the post procedural recovery and this results in prolonged stay in the emergency department.²⁵

Bhoi and group concluded that provision of a peripheral nerve block is a safe alternative that utilizes minimal amounts of local anaesthesia and does not necessarily require haemodynamic monitoring or prolonged post procedure observation.²⁷

Blavais and colleagues in 2006 described 4 cases of successful shoulder anaesthesia and dislocation reduction performed following ultrasound guided interscalene brachial plexus block.²⁵

Liebermann et al in a different study performed ultrasound guided forearm nerve blocks on 11 patients. None of the patients required rescue analgesia or anaesthesia during the subsequent procedures.²⁶

CANCER PAIN

The WHO has designed a stepwise pain ladder which should be employed by medical personnel especially in the accident and emergency department. It stratifies different levels of pain and the appropriate analgesic to be administered.

WHO through these guidelines can help to promote adequate availability of opioids and other essential analgesics. Often the allowed dosages of opioids in policy guidelines from the governments do not consider the patient's pain status and the effectiveness of the treatment. Authoritative, clear and concise evidence-based guidelines from WHO could have a major impact on the correct use of these drugs. These will be very much welcomed by the medical communities, as well as regulatory authorities in all countries.²⁸

ACUTE ABDOMINAL PAIN

Acute abdominal pain is a symptom of many conditions, ranging from benign

to life-threatening. Establishing the cause of abdominal pain and formulating a definitive diagnosis can be difficult. Assessment often involves diagnostic imaging investigations and consecutive examinations by more than one clinician.²⁹

Internationally, surveys in adult and paediatric emergency care settings have found that emergency physicians and surgeons commonly prefer to withhold analgesia for acute abdominal pain, even when they do not believe that opiate medication changes important examination findings.³⁰

Currently, surgical literature emphasize that unrelieved pain can have profound psychological effects on the patients and is associated with increased stress and makes the patient uncooperative during physical examination.³¹

Audits of emergency care practice have found that less than one third of adult or paediatric patients with acute abdominal pain received opioids or any analgesic medication.³²

Where analgesia is given, it may not be adequate to provide relief from pain. One study in paediatric emergency care found that the analgesics were administered at sub-therapeutic doses in 14% of patients.³³

Another study found use of opioid analgesia for adults with acute abdominal pain more than doubled from 23 per cent in 1998 to 53 per cent in 2003, along with a dramatic increase in pain score documentation, following intensive campaigns about the importance of managing pain symptoms.³⁴

PAIN THE PAEDIATRIC AGE GROUP

Pain is commonly under-recognised, under-treated and treatment may be delayed. Reasons include difficulty in assessing severity, the child may not appear distressed or have difficulty describing / admitting to pain.³⁵

Drug choice and dosage may also cause problems due to unfamiliarity.³⁵

Recognition and alleviation of pain should be a priority when treating ill and injured children. This process should start at the triage, be monitored during their time in A&E and finish with ensuring adequate analgesia at, and if appropriate, beyond discharge.³⁵

Boyd et al found out that the use of a nurse initiated, oral analgesia protocol for treatment of children with mild to moderate injury can significantly increase analgesia provision rates and decrease time to provision of analgesia. This is in comparison with physician oriented analgesia.³⁶

In treating pain, attention should be paid to the other factors distressing the child such as fear of the unfamiliar environment and people, parental distress, people in uniforms, needle avoidance,

fear of injury severity etc. Razzaq suggested that children should be placed in a separate room where there are colourful walls with pictures and toys.³⁷

Petrack et al described that through the years there had been an assumption amongst health care providers that children, especially infants may not experience pain with the same intensity as adults.³⁸

Historically children have received relatively poorer pain control than the adult population. Reasons behind this oligoanalgesia for acute pain in children is unclear but almost certainly includes staff inexperience in paediatric pain prescription, fear of causing drug side effects or dependence and lack of proper pain assessment methods.(Boyd and Stuart).³⁶

A study in South Africa showed that children with moderate to severe pain received analgesics significantly more often than children with less intense pain. They also found out that some providers were hesitant to use narcotic analgesics because of their associated addiction or respiratory depression.³⁹

Petrack, Christopher and Kriwinsky emphasized that analgesic use in children remains significantly less than in adults. They also found out that discharge analgesia was also inadequate.³⁸

The above references prove that there is inadequate administration of analgesia in the accident and emergency departments.

Studies have shown that nurse-initiated provision of analgesia in the accident and emergency department has greatly reduced the time that the patients have to wait to receive pain relief. This is because previously patients had to wait to be attended to by the doctor before they could receive any form of pain medication. This however has been done under very strict protocols.³⁶

A study by Kelly, Brumby and Barnes showed that, in that setting, nurse-initiated opioid analgesia reduced time to first analgesic dose by approximately 25 minutes.⁴⁰

A Study done by Reichl and Bodiwala used 7 common hypothetical situations to evaluate pain management by accident and emergency Senior House Officers. They concluded that analgesia management by these doctors was inadequate. They also suggested the need for more detailed teaching on pain management, analgesia oriented induction courses and the adoption of an appropriate analgesia policy in accident and emergency departments.⁴¹

A study by Sandhu and Driscoll on knowledge of SHOs in provision of optimal analgesia showed that SHOs lacked confidence in using strong opioids in adults and children. Also that a few doctors would titrate the analgesic against the patient's response and that the majority were reluctant to use the intravenous route in the elderly.⁴²

3.0 STUDY JUSTIFICATION

Pain management continues to be a challenge among healthcare providers and lay people alike. Pain management especially in the accident and emergency department should have a protocol or standards which can be followed so as to offer good care to the patient. This also in turn allays the patient's anxiety as well as that of those accompanying him/her.

The accident and emergency department is key in pain management as this is the patient's first contact with a medical professional, on arrival at the hospital.

In addition to acute pain, chronic pain is also a reason as to why patients seek medical attention. Chronic pain is disturbing to the patient and it can markedly reduce the productivity of the patient. It therefore has to be assessed and proper management administered.

A nurse is the first person that a patient presenting to the accident and emergency department will encounter .⁶ His or her role is to perform a primary assessment and allocate a triage score depending on the severity of the patient's condition. The medical personnel should acknowledge the patient's pain.⁶ The assessment that then follows should be incorporated into routine observation as the 5th vital sign after temperature, respiration, heart rate, blood pressure.⁷

Kenyatta National Hospital is the largest hospital in Kenya. Secondly it receives the largest number of referrals from all over the country and beyond. In turn this means that the number of patients is high, with a majority of them presenting with pain. Therefore it is important that pain management be at its best.

This study has not been done in our set up before, hence we do not have local data to help our medical institutions to form protocols or guidelines around this subject.

4.0 GOALS AND OBJECTIVES

To promote and improve the standards of pain management in the accident and emergency department of Kenyatta National Hospital.

RESEARCH METHODOLOGY

A cross-sectional descriptive analytical study involving the use of an anonymous questionnaire administered among the nurses and doctors working in the accident and emergency department of Kenyatta National Hospital.

RESEARCH QUESTION

Is there a low level of knowledge, attitude and practice of analgesic use amongst nurses and doctors in the accident and emergency department of Kenyatta National Hospital?

STUDY OBJECTIVE

To explore the knowledge, attitudes and practice of analgesic use amongst staff in KNH accident and emergency department.

SPECIFIC OBJECTIVES

- To determine the knowledge of analgesics amongst KNH staff in accident and emergency department.
- To determine the pharmacological agents used in management of pain and the routes of administration.
- To identify the challenges faced by the staff in the accident and emergency department that hinder effective pain management.
- To determine the tools used to assess pain in the accident and emergency department.

5.0 MATERIALS AND METHODS

5.1 STUDY DESIGN

This was a cross-sectional descriptive study on the knowledge, attitude and practice of analgesic use amongst doctors and nurses in Kenyatta National Hospital Accident and Emergency Department. It involved the administration of questionnaires to the doctors and nurses working in the Accident and Emergency department.

STUDY SITE

Kenyatta National Hospital- Accident and Emergency Department. The medical personnel who covered the department were doctors and nurses. There were of different cadres of doctors- mostly medical officers and registrars from different medical and surgical disciplines.

Majority of the nurses were Accident and Emergency trained nurses.

STUDY POPULATION

Target population was all the doctors and nurses who work at the Kenyatta National Hospital, Accident and Emergency Department.

INCLUSION CRITERIA

All doctors and nurses working in KNH accident and emergency department, who gave consent.

EXCLUSION CRITERIA

- Doctors and nurses working in KNH accident and emergency who did not consent to participate in the study.
- Doctors and nurses who were not available and were not within reach during the study period.
- Doctors and nurses working in the accident and emergency department on a temporary basis.

SAMPLING AND SAMPLE SIZE

Sample size was determined using the following formula

$$N = \frac{Z^2 \cdot P(1-P)}{D^2}$$

Where:

- ✓ N is the sample size
- ✓ Z is the standard normal deviation at the required confidence level (1.96)
- ✓ P is the proportion in the target population estimated to have the characteristics being measured. From a study done in 1996, Goodacre and Roden showed that introduction of pain protocols in the accident and emergency department reduced the percentage of patients with unsatisfactory analgesia from 91%-69%.
- ✓ D is the level of significance set as 6%

$$N = \frac{(1.96)^2 \times 0.91 \times 0.09}{(0.06)^2}$$

$$N = 126$$

MATERIALS, METHODS, DATA COLLECTION AND STORAGE

The data was obtained from completed questionnaires (appendix 4) which were filled by the participants working in the accident and emergency department after obtaining informed consent.

All questionnaires were administered by the principal investigator then the information in the data forms was verified thereafter for completeness.

The participant was requested to submit the questionnaire back to the investigator on the same day. The data was then recorded electronically, analyzed and presented in both graphical and text formats.

DATA MANAGEMENT

The data was stored in an SPSS database.

Data quality was ensured by conducting consistency and range checks by the study's statistician.

In order to maintain confidentiality of the respondents, they were not required to enter their names onto the questionnaires.

DATA ANALYSIS

Demographic Data

The demographic data of the study participants was presented in graphical form. These data included age, gender and professional cadre among others.

Data on Knowledge, Attitude and Practice

The various aspects of pain management were presented in form of tables, bar graphs and pie charts. SPSS version 17 software was used in the analysis.

DATA DISSEMINATION

The study provided data on the management of pain in the Accident and Emergency department. The results shall be disseminated to fellow colleagues, Kenyatta National Hospital/ University of Nairobi and Ethics and Research Committee; with the intention of creating awareness about pain management.

ETHICAL CONSIDERATIONS

1. The nature of the study was explained to all the participants.
2. The study was undertaken after informed consent was obtained from the respondent.
3. The study did not cause harm to the respondents.
4. Confidentiality was maintained at all stages.
5. The study was undertaken after approval from the Ethics Committee of the Kenyatta National Hospital/University of Nairobi.
6. Results of the study will be availed to the Ethics Committee of the Kenyatta National Hospital and College of Health Sciences, University of Nairobi.

RESULTS

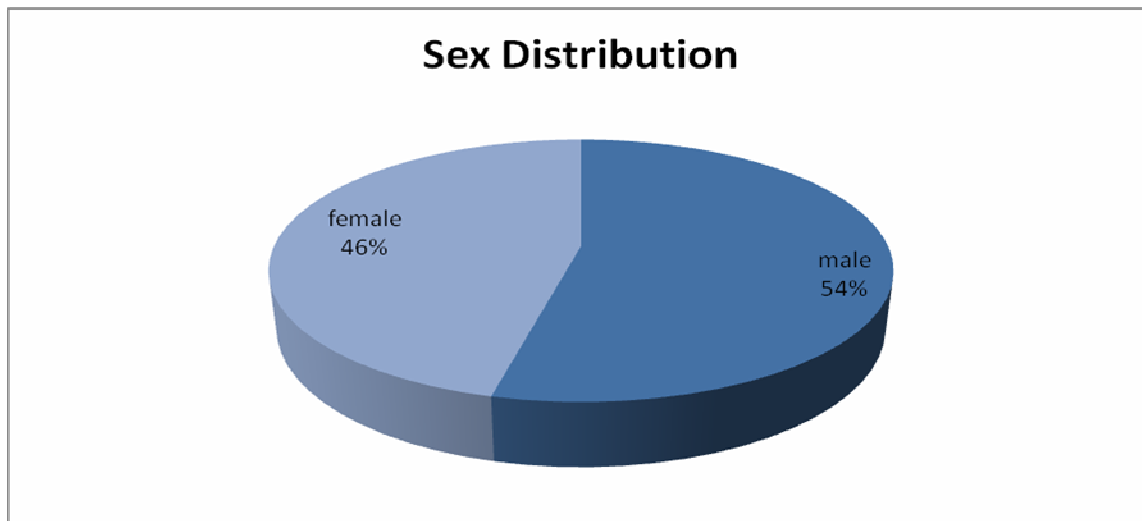
Part one

Demography

Gender Distribution of the Respondents:

Out of the 150 questionnaires distributed to nurses and doctors working in the accident and emergency department, 130 were duly completed and returned. There were more males than females with a male:female ratio of 1.6:1

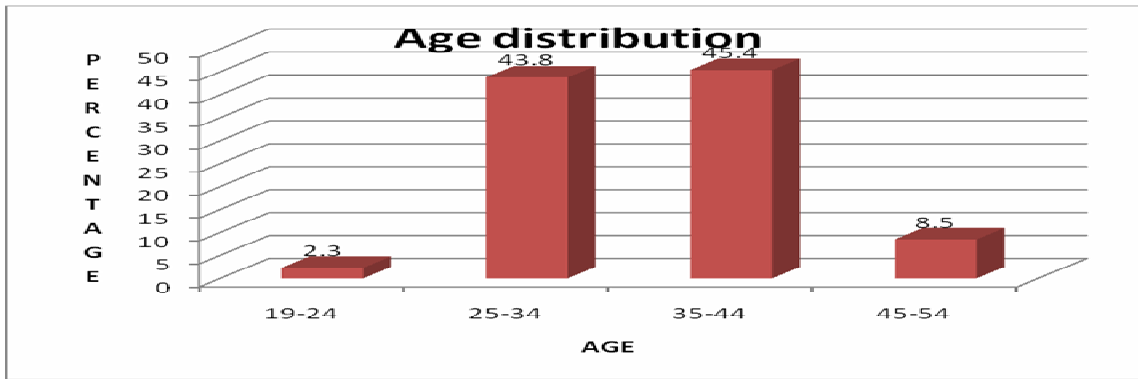
Fig. 1



Age distribution

Figure 2 illustrates the age distribution of the respondents. 45.4% were within the 35-44 age group and 8.5% in the oldest.

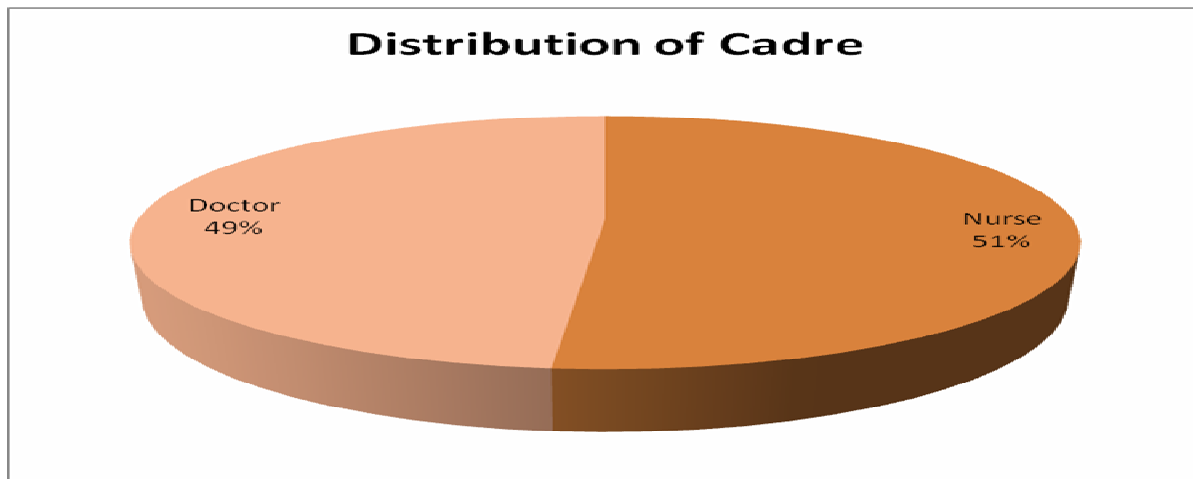
Fig. 2



Cadre

The respondents comprised of nurses and doctors. Figure 3 illustrates the cadres of the respondents sampled.

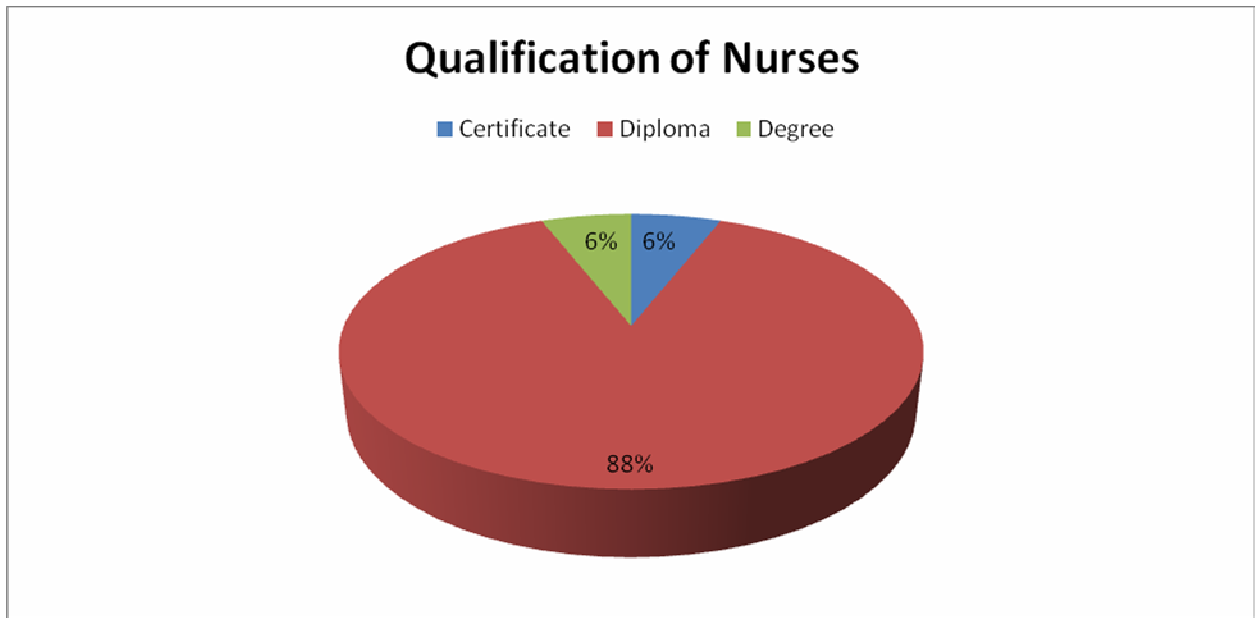
Fig. 3



Qualification of nurses

Figure 4 illustrates the qualification of nurses sampled. Majority of them were diploma holders (88 %).

Fig. 4



The table below shows the number of years that the nurses have worked in the accident and emergency department. The average is 14 years.

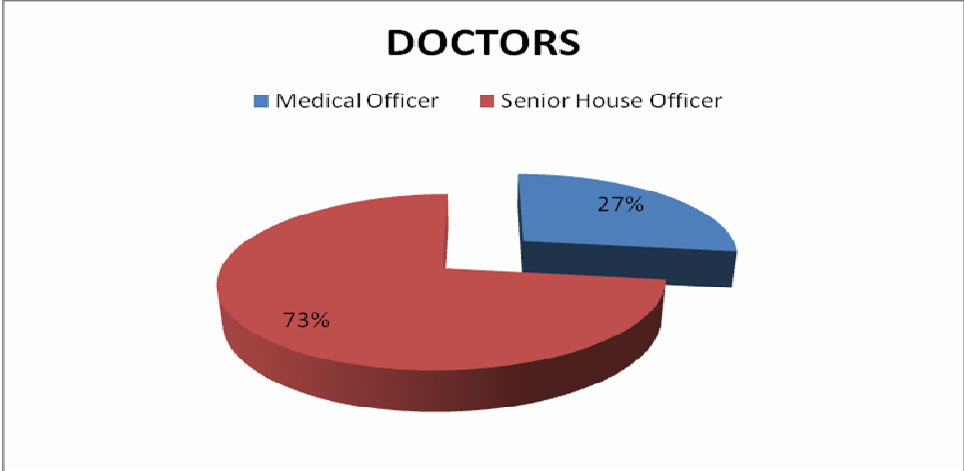
Table 1

Mean (Years)	14.0
Median	13
Minimum	5
Maximum	30

Qualifications of doctors

The accident and emergency department was covered by both Medical Officers and Senior House Officers. This is illustrated in Fig 5-Senior House Officers were the majority represented by 73%.

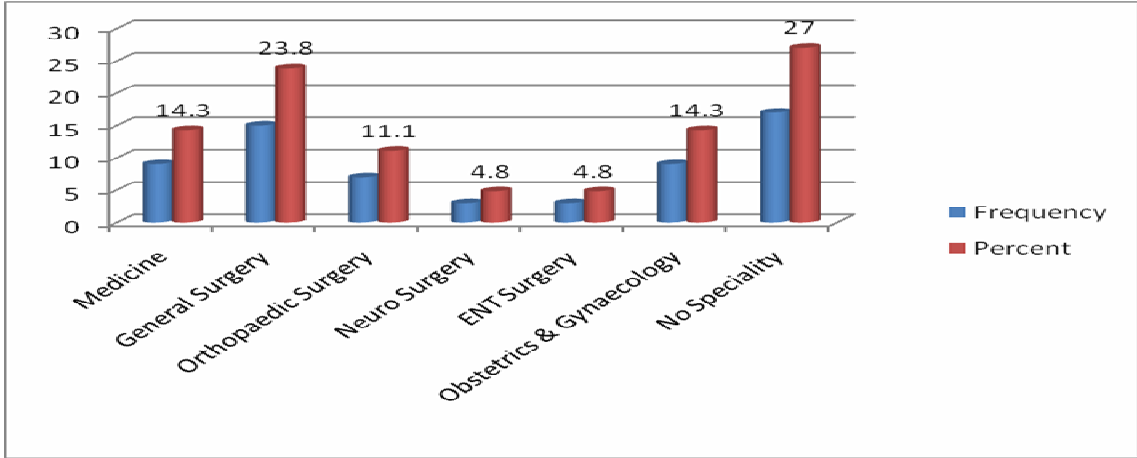
Fig. 5



Distribution of Specialties

The senior house officers attend to patients in the accident and emergency department of Kenyatta National Hospital. These senior house officers belonged to different specialties. The specialties are illustrated by the graph below.

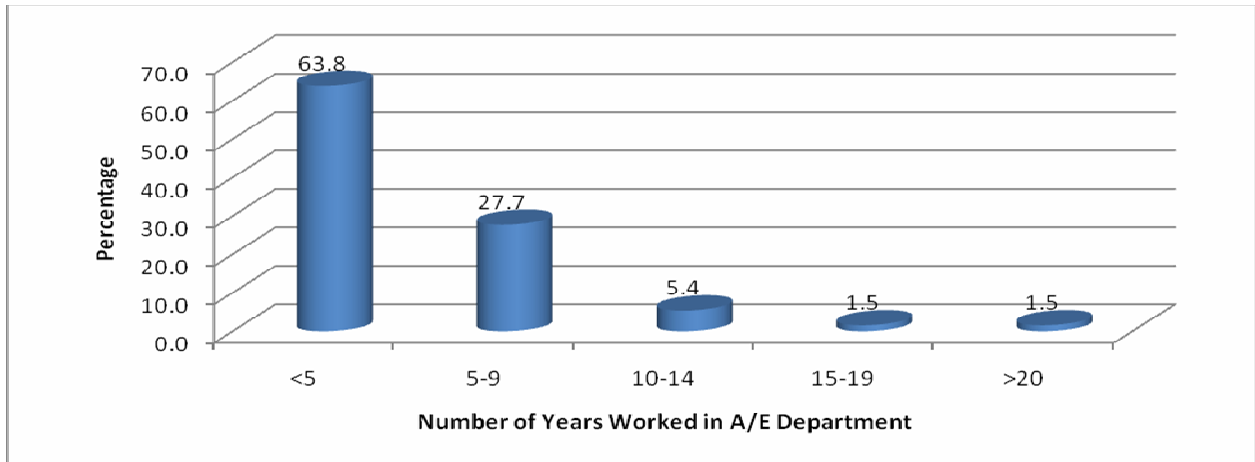
Fig. 6



Number of years worked in the accident and emergency department.

Figure 7 below shows the number of years that the respondents sampled had worked in the accident and emergency department. Majority had worked for less than 5 years corresponding to 63.8%.

Fig.7

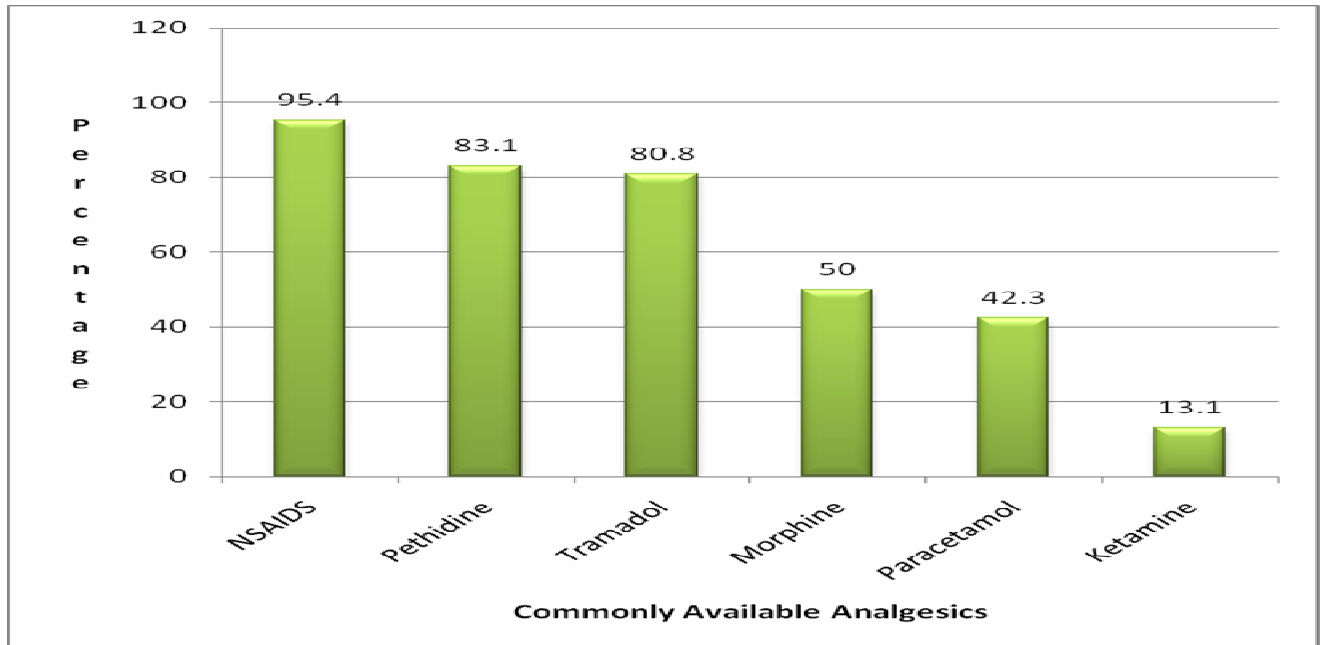


Part 2

Commonly available analgesics.

The most commonly available analgesics in the accident and emergency department were from the NSAID group. These were followed by pethidine and tramadol respectively. This is illustrated in the graph (fig. 8) below.

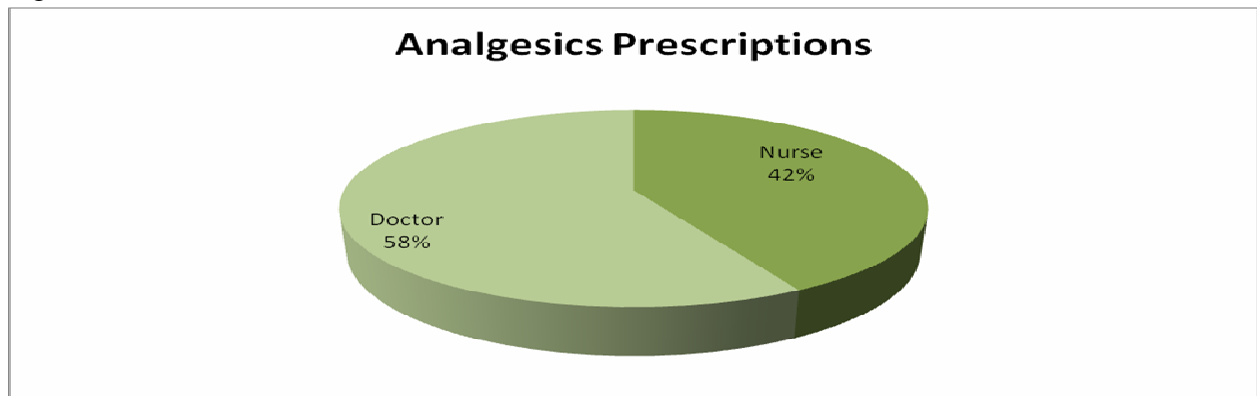
Fig. 8



Who normally prescribes analgesics?

On prescription of analgesia in the accident and emergency department, both doctors and nurses do prescribe analgesics. From the graph, the doctors prescribed the analgesics more than the nurses in the department.

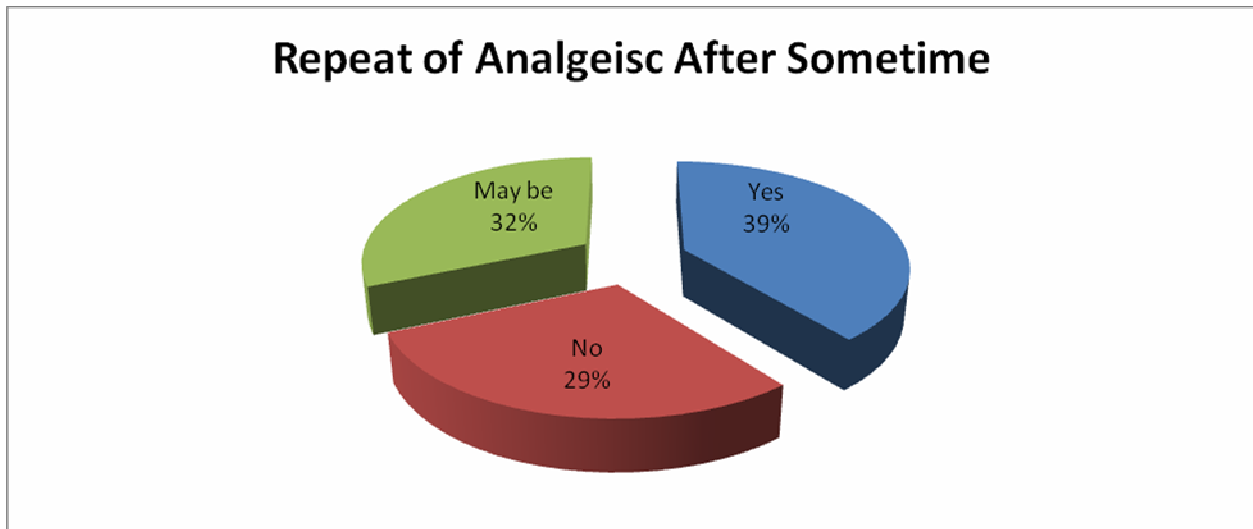
Fig.9



Repeat of analgesics after sometime.

39.2% of the respondents indicated that they would repeat the analgesic after sometime. 31.5 % however would or would not repeat the analgesia. (Fig. 10)

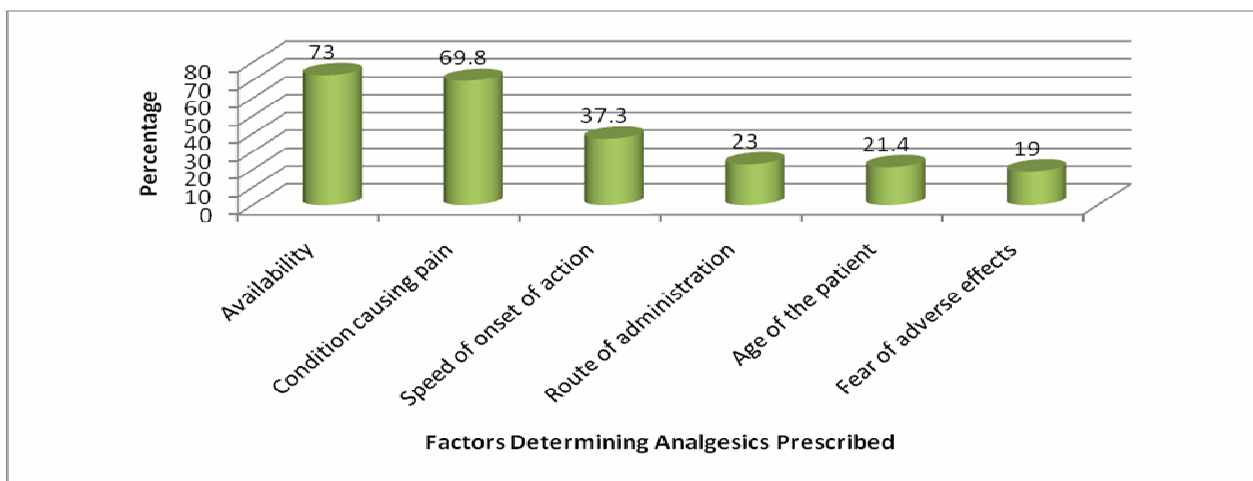
Fig.10



Choice of analgesics administered.

As shown in the graph, the choice of analgesics depended largely on the drug which was available at the accident and emergency department at the given time. This was represented by 73%. Fear of adverse effects is represented by 19% meaning it was not an important consideration when choosing analgesics.(Fig 11)

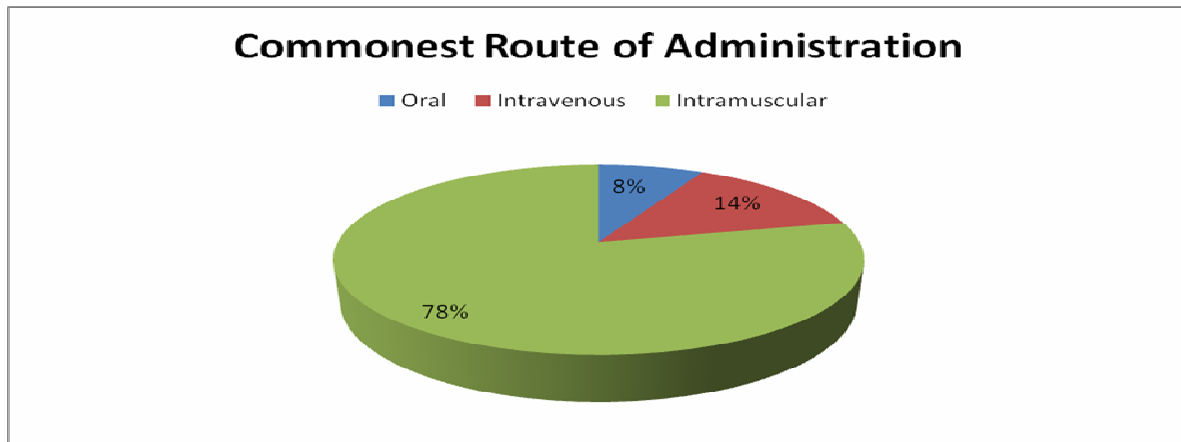
Fig. 11



Commonest route of administration

The respondents indicated that the commonest route of administration was the intramuscular route(78%) and they attributed this to ease of administration (51.4%). The least common route of administration was the oral route which is represented by 8% of the respondents.

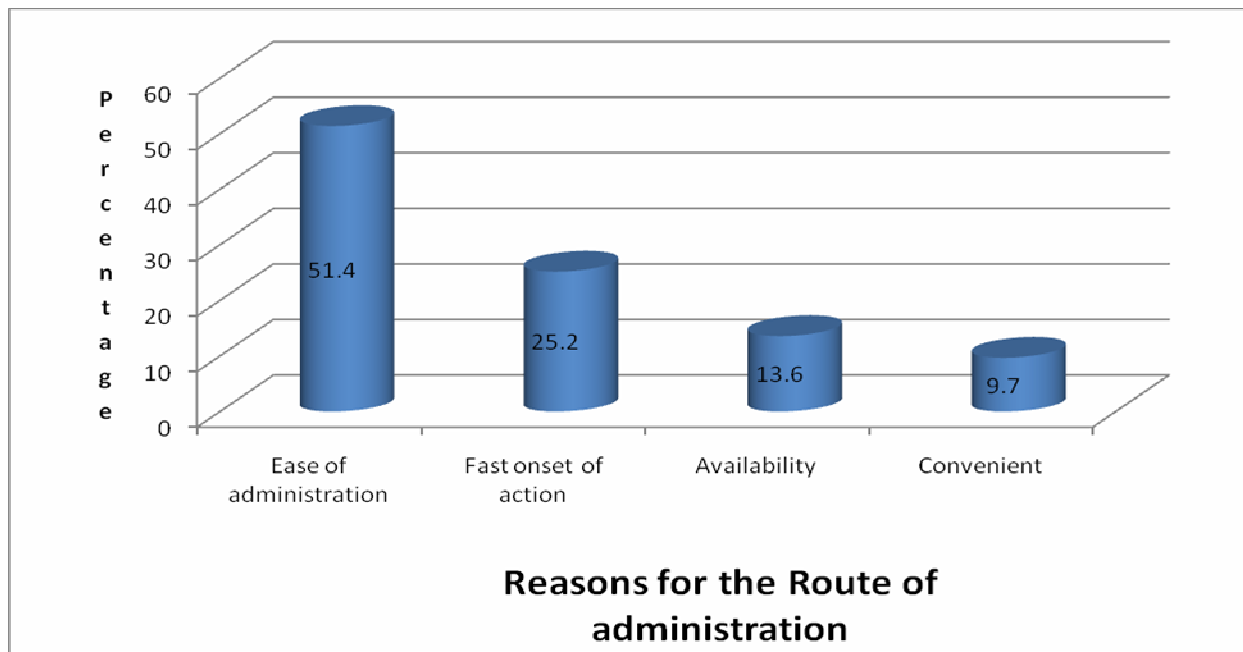
Fig. 12



Why the choice of analgesic?

Majority of the respondents gave the reason of choice of analgesic as Ease of administration. This made up 51.4%.

Fig.13

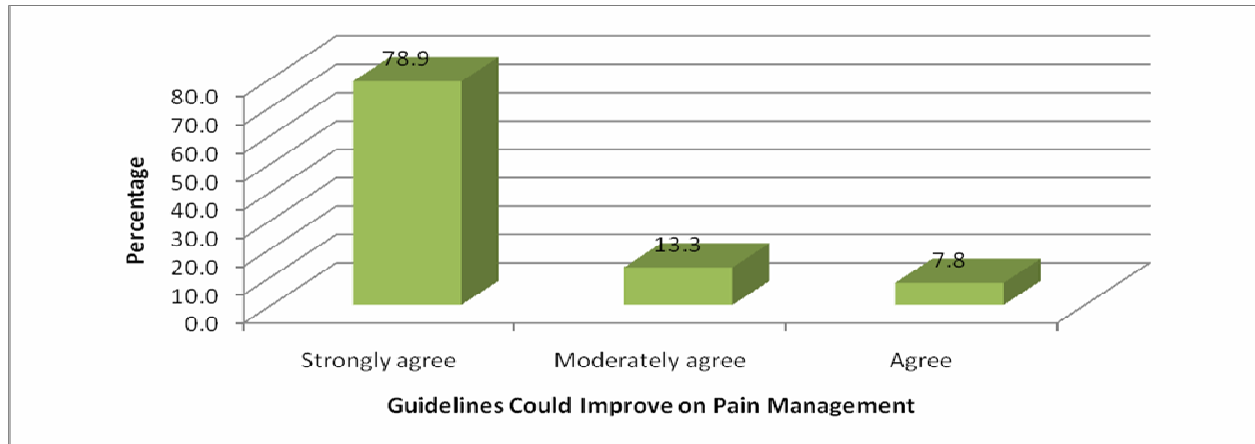


Part 3

RESPONDENTS' ATTITUDE ON GUIDELINES

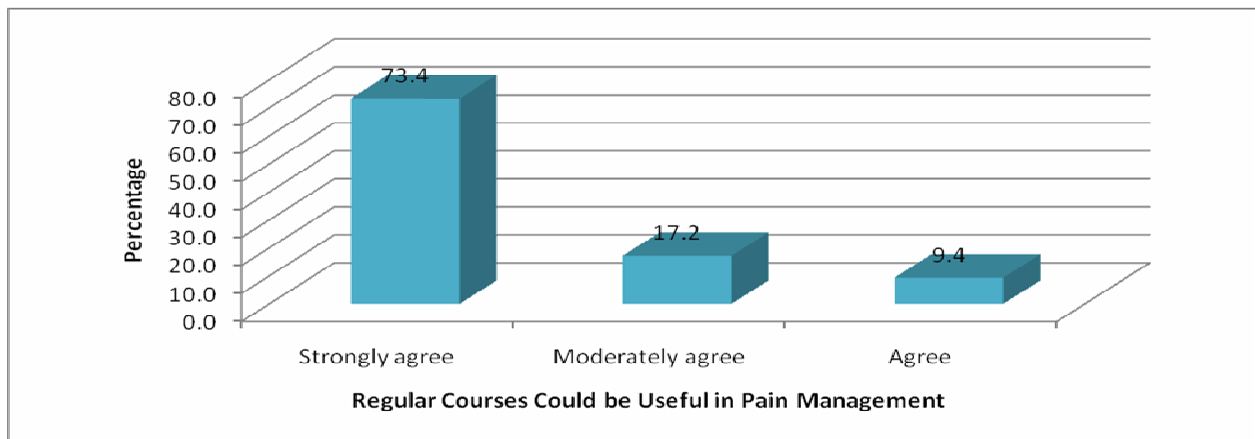
78.9% of the respondents indicated that they strongly agreed that guidelines would improve pain management in the department.

Fig. 14



Majority of the respondents strongly agreed that they would benefit from regular courses on pain management as indicated by the 73.4% of the respondents

Fig. 15



Part four:

CLINICAL SCENARIOS ON THE KNOWLEDGE AND PRACTICE OF ANALGESIC USE IN ACCIDENT AND EMERGENCY DEPARTMENT.

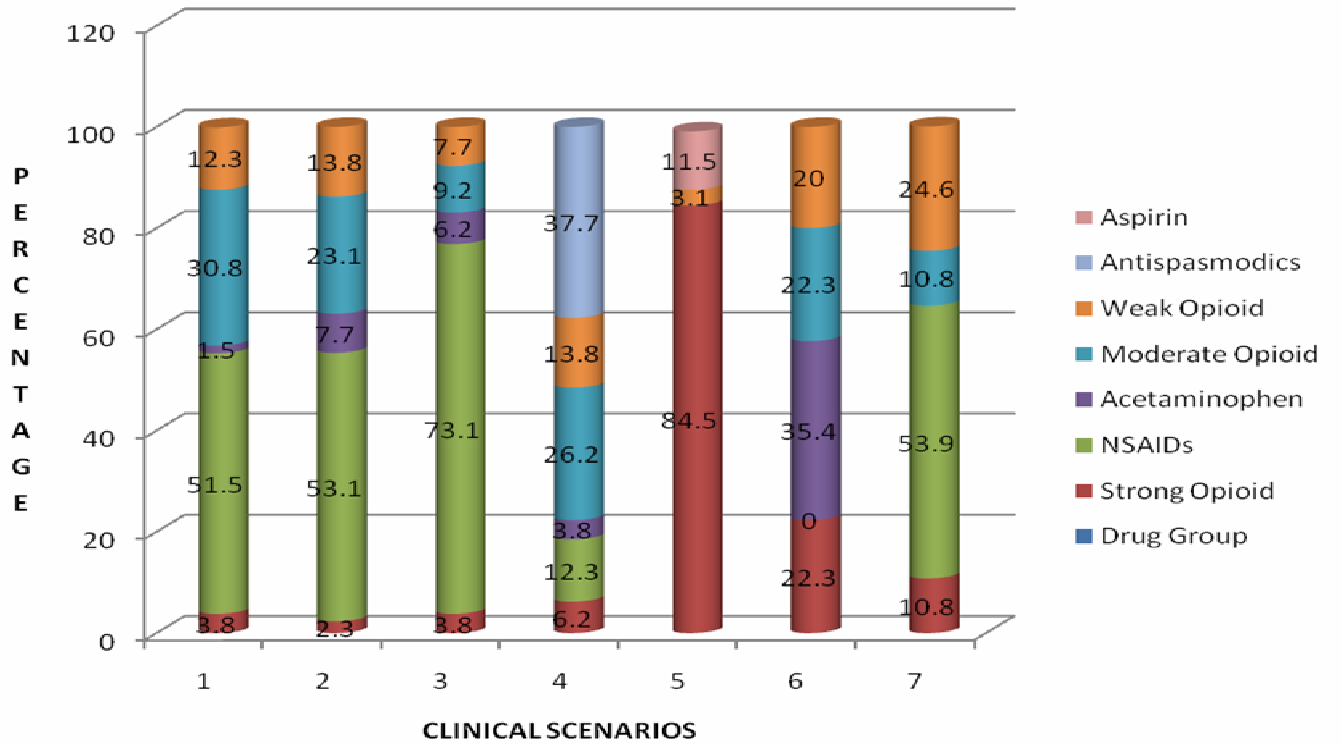
Common clinical scenarios were included in the questionnaire to gauge the knowledge and practice of analgesic use in the accident and emergency department.

Table 2 Choice of analgesia for all scenarios (%)

Drugs	1	2	3	4	5	6	7
Strong opioid	3.8	2.3	3.8	6.2	84.5	22.3	10.8
NSAIDs	51.5	53.1	73.1	12.3	-	-	53.9
Acetaminophen	1.5	7.7	6.2	3.8	-	35.4	10.8
Mod. Opioid	30.8	23.1	9.2	26.2	-	22.3	24.6
Weak opioid	12.3	13.8	7.7	13.8	3.1	20	-
Antispasmodics	-	-	-	37.7	-	-	-
Aspirin	-	-	-	-	11.5	-	-

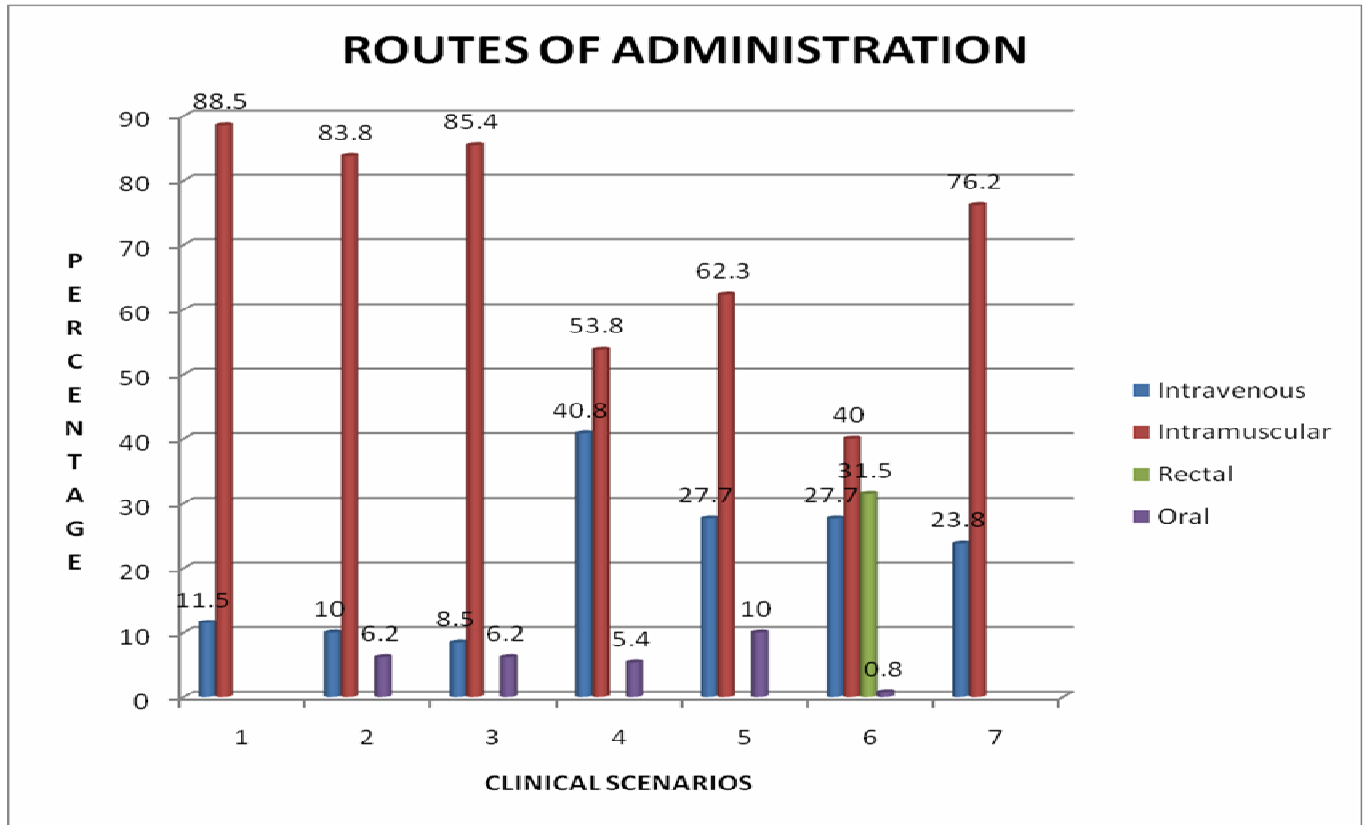
Fig. 16

ANALGESIC CHOICES



The figure below shows the common routes of analgesic administration for each of the scenarios. The commonest route of analgesic administration is via the intramuscular route in all the scenarios. This is further demonstrated by the graph below.

Fig. 17

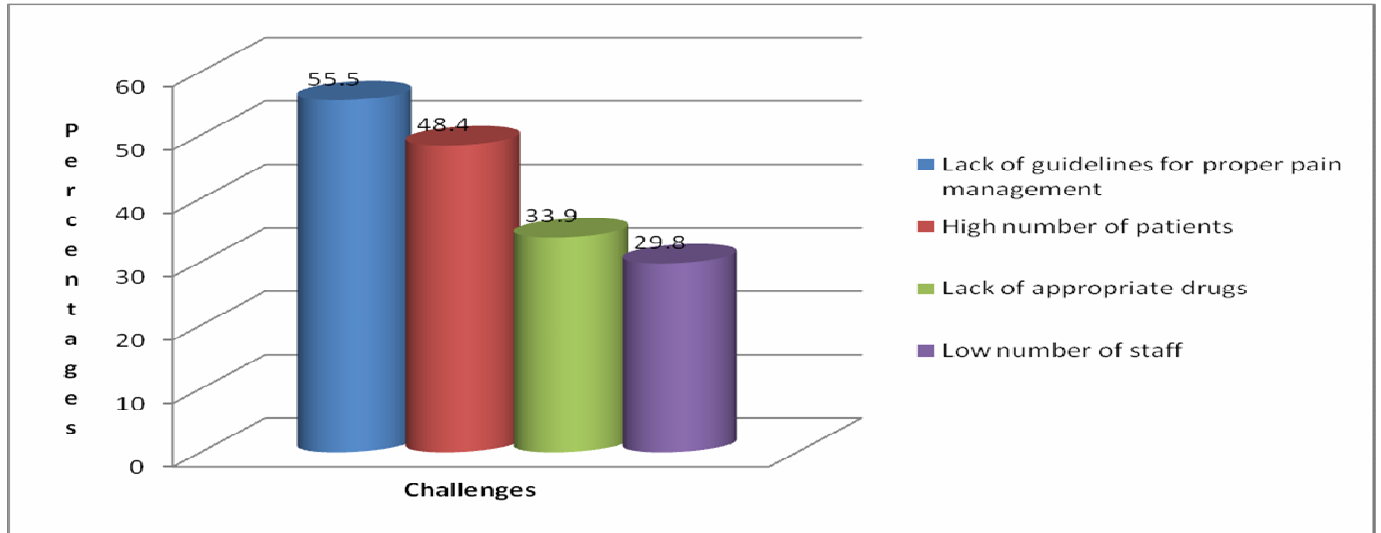


Part Five

Challenges Faced in provision of effective pain management.

Majority of the respondents identified the major challenge that hinders effective pain management as lack of proper pain management guidelines -55.5%. 29.8% indicated that the low number of staff was a challenge.

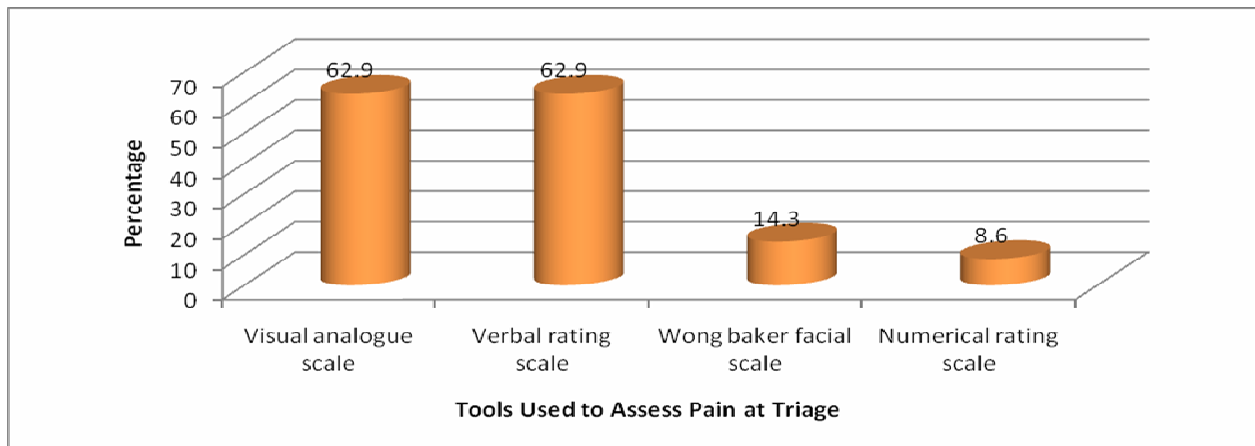
Fig. 18



Q2. Tools used to assess pain.

The respondents were asked on the tools they used in the accident and emergency department to assess pain. Majority of the respondents indicated 2 different tools: the visual analogue scale and the verbal rating scale-each getting 62.9%. The numerical rating scale which is used widely in studies, however, got a low percentage of 8.6%

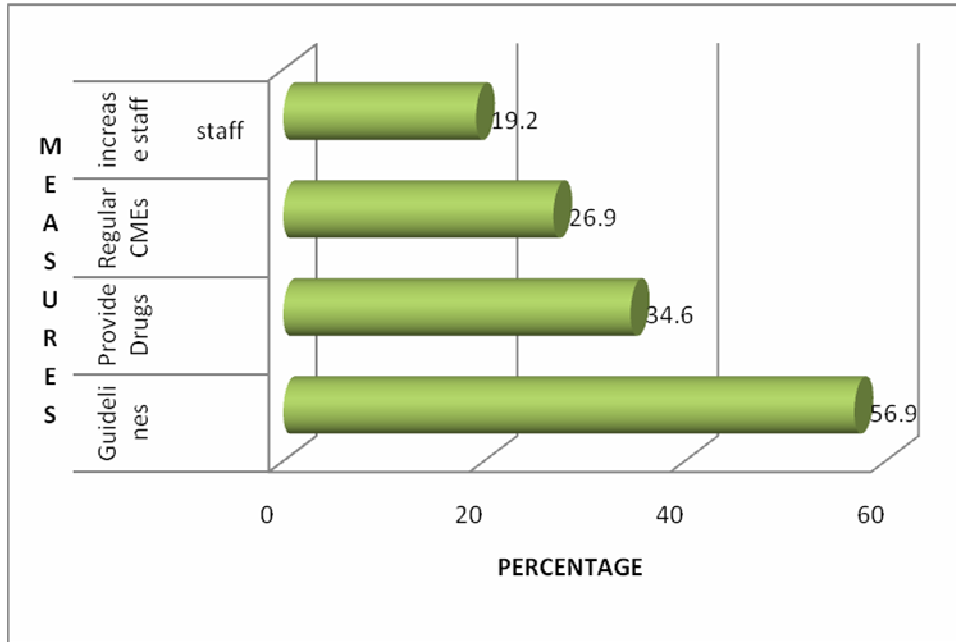
.Fig. 19



Improvement on effective pain management

Majority of the respondents would like guidelines on effective pain management introduced in the accident and emergency department. This is followed by provision of drugs.

Fig 20 Measures to improve pain management:



DISCUSSION

The aim of the study was to explore the use of analgesics in the accident and emergency department at the Kenyatta National Hospital. It was also to determine if there was a low level of knowledge, attitude and practice of analgesic use in the department. This is because, worldwide, pain is undertreated and more so in the accident and emergency departments. This study has highlighted the challenges faced by the nurses and doctors in the department when it comes to provision of pain relief.

Pain management should start from the accident and emergency department as this is the first contact the patient has with a healthcare provider. The nurses and doctors who work in this department are of different cadres and have had different experiences. As depicted from the data, the respondents were of different age groups and had worked in the accident and emergency department for varied numbers of years. This is important to note as experience helps to create confidence in management of different ailments that these respondents come across.

Majority of the doctors who attended to patients in the accident and emergency department were Senior House Officers, doctors who were training to be consultants in various specialties. Consultants rarely attend to patients in the accident and emergency department but they can be consulted. Emergency physicians should be available in the KNH accident and emergency department to attend to the queries raised by the junior doctors and to address issues on pain management and other emergencies.

The patients' pain should be assessed. Assessment of pain depends on the patient's description of the pain but a more objective rather than subjective tool should be used. The hospital should equip the nurses and doctors with tools to assess and record pain. This should be done at triage and pain relief should be administered from there. It is documented that good pain assessment is essential for good pain management but studies comparing clinician assessment with patient's actual pain ratings frequently confirm that clinicians underestimate levels of pain, and hence prescribe mild analgesics for patients.

With proper assessment and follow up of the patient while at the accident and emergency department, the nurses can reassess the patient and decide whether or not he/she needs another dose of the same analgesic or a different one. According to this study both nurses and doctors can prescribe analgesics which helps to reduce the time the patient may have to wait to get the analgesic. This also helps to reduce the patient's anxiety. It has been proven that nurse-initiated opioid analgesia reduces time to the patient receiving the first analgesic dose. In the same study, there were no reports of serious side effects.⁴

The most commonly available analgesic in the accident and emergency department was NSAIDs, followed by pethidine. Amongst the factors determining the analgesics prescribed,

availability and condition causing pain got the highest responses. Fear of adverse effects got the least response. In the WHO pain ladder, NSAIDs are ranked as the analgesics of choice for mild pain together with paracetamol. For patients with moderate to severe pain, the analgesic of choice should be a strong opioid.

These clinical scenarios are examples of common patients who are seen daily at the accident and emergency department of the Kenyatta National Hospital. Majority of these scenarios involved fractures and other common accidents seen e.g. Burns.

In these scenarios the patients were in moderate to severe pain, in need of analgesia. In our set up majority of the respondents would administer NSAIDs via the intramuscular route. According to the WHO Analgesic ladder, this is in the category of simple analgesics and is recommended for mild pain.

Similar scenarios were used in a study in 1998 by Sandhu et al., where majority of the respondents recommended strong opioids as the choice of analgesic-70.4%. The main routes of administration were intravenous (43.2%) and intramuscular (30.8%). The commonest choice of analgesic was NSAIDs (51.5%-73.1%). The commonest route of administration was the intramuscular route. This indicates a low level of knowledge amongst the nurses and doctors working in the accident and emergency department of Kenyatta National Hospital.⁴²

This is also reflected in the clinical scenarios whereby majority of the respondents would administer NSAIDs as opposed to the opioids. These types of responses indicate the nurses and doctors were reluctant to administer opioids.

For the ones who would administer opioids the route of administration was intramuscular. Studies have shown that intravenous analgesia is superior for reasons of speed of onset, reliability of uptake and the ability to titrate doses to responses.

This also illustrates opiophobia. The prejudice against the use and prescription of opioid analgesics. Consequently patients either do not receive proper analgesics or receive them in inadequate dosages.¹⁵

It has been documented that patients who are treated with intramuscular analgesics in the accident and emergency department continue to complain of severe pain more than 30 minutes after initial treatment and require further doses of analgesics.¹²

However, the myocardial infarction scenario had appropriate responses but again majority of the respondents would administer the opioid via the intramuscular route. In the British study by Sandhu, the myocardial infarction scenario had the best responses for both the prescribing of an appropriate analgesic drug and the choice of a suitable route.⁴²

This further indicates that the barriers that preclude accident and emergency nurses and doctors from proper pain management include age bias, inadequate knowledge and formal training in acute pain management and opiophobia.¹⁵

The other challenge comes in pain management in children. In the clinical scenario given of a child with 20% burns, the majority of respondents said they would administer acetaminophen rectally as the first form of pain relief.(35.4%). The ideal drug would be a strong opioid, given IV and titrated to effect.⁴²

It has been documented that nurses and doctors underestimate children's pain and this makes them to be often undertreated. Psychological strategies involving the parents such as cuddles, a child friendly environment and explanation with reassurance all help to build trust. Together with non pharmacological adjuncts such as limb immobilisation and dressing for burns. It has also been recommended that conscious sedation should be used when performing procedures on these children e.g. use of Ketamine.¹¹

From the study, the respondents identified that one challenge they faced in the department was lack of proper guidelines to effectively manage pain.

Ducharme indicated that in an effort to achieve a "pain free" accident and emergency department, one of the options would be to modify clinical practice with the implementation of clinical practice guidelines. These are meant to aid in decision-making with respect to patient evaluation and care.

Pain management protocols have been shown to be helpful in reducing undertreatment in the accident and emergency department. Introduction of guidelines can stipulate that patients with pain in the accident and emergency department should be assessed and accurate pain scores recorded.

With proper guidelines, and depending on the pain score, the appropriate analgesic at the appropriate dose would be administered. With this being done at the triage station, the nurses would be the ones to prescribe and administer the analgesic. A nurse-initiated opioid analgesic protocol has been shown to reduce delays to opioid analgesia for patients requiring opioid analgesia.⁴⁰ From this study, 78.9% of the respondents strongly agreed that guidelines would improve pain management in the department. 73.4% concurred that regular refresher courses on pain management would be useful.

The survey focussed on the care givers' perspective and not on the patients themselves. Therefore, conclusions cannot be drawn regarding effectiveness of pain management on the patients attended to at the accident and emergency department at the KNH. Further studies can be conducted whereby a trial protocol can be implemented. This would give opportunities for other studies to be conducted which would be patient-oriented.

CONCLUSION

- The survey exposed the inadequate knowledge of analgesic use and effective pain management in the accident and emergency department at the KNH. This in turn translates to ineffective pain management to the patients attended to in the department.
- The survey also identified the commonest analgesic group used in the management of pain in the accident and emergency department at the KNH. This was the NSAIDs group which is good for mild pain and is inadequate for moderate to severe pain.
- The respondents felt that the introduction of pain management guidelines would improve the management of pain in the department. The respondents were aware that pain assessment scales were useful in the management of pain but these were unavailable in the department.
- Frequent refresher courses on effective pain management in the accident and emergency department at the KNH would greatly help the nurses and doctors to offer adequate and appropriate analgesia to the patients they attend to.
- The visual analogue scale and verbal rating scale were the commonest tools used to rate pain. These should be used objectively to adequately manage pain in the accident and emergency department.

Pain management in the accident and emergency department in any hospital remains an important component of emergency medicine.

LIMITATIONS

This study was only carried out in Kenyatta National Hospital, and therefore only incorporated the knowledge, attitude and practice of a few health care providers in comparison to the other health facilities nationwide.

RECOMMENDATIONS

- Pain rating scales should be introduced as an objective tool of assessment of pain in the accident and emergency department of Kenyatta National Hospital.
- Regular refresher courses on analgesics and their use should be given to the nurses and doctors of the accident and emergency department.
- Introduction of procedural local anaesthesia can assist in the management of acute pain in the accident and emergency department at the KNH.
- With more data and more research papers, guidelines should be formulated to enable the doctors and nurses working in the accident and emergency department to provide effective analgesia.
- A local study to find out the incidence of pain in the accident and emergency department should be done.

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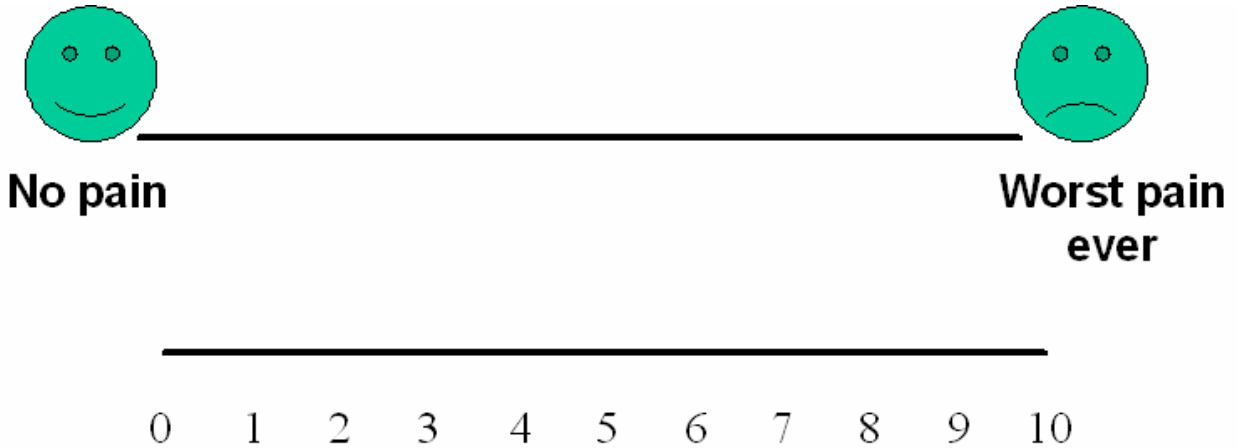
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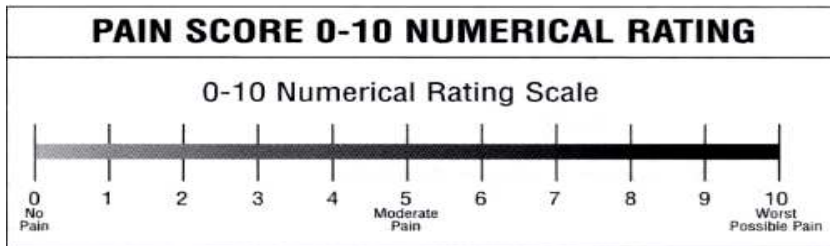
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APPENDIX 1

VISUAL ANALOGUE SCALE¹⁸



NUMERICAL RATING SCALE



FACES RATING SCALE

Faces rating scale (FRS)



APPENDIX 2

Figure 1. WHO Analgesic Ladder



Step 1	Mild pain	Simple analgesics e.g. paracetamol, conventional NSAIDs and COX-2 inhibitors with or without co-analgesics
Step 2	Moderate pain	Weak opioid e.g. dihydrocodeine, dextropropoxyphene with or without adjuvant analgesics, e.g. gabapentin
Step 3	Severe pain	Strong opioid e.g. morphine, fentanyl, with or without adjuvant analgesics, e.g. gabapentin. In clinical practice adjuvant analgesics may contribute to the relief of pain without being classical analgesics

APPENDIX 3

INFORMED CONSENT FORM

KNOWLEDGE, ATTITUDE AND PRACTICE OF ANALGESIC USE IN THE ACCIDENT AND EMERGENCY DEPARTMENT IN KENYATTA NATIONAL HOSPITAL.

This Informed Consent Form is for medical personnel who work in the Accident and Emergency Department at the Kenyatta National Hospital. You are hereby invited to participate in the above mentioned study

PART I: Information Sheet

Introduction

I am Dr. Christine M. Gathiri, a third year resident in the MMed Anaesthesia program. I am conducting a survey on the knowledge, attitude and practice of analgesic use in the Accident and Emergency Department at the Kenyatta National Hospital, as part of my post-graduate program requirements. I will strive to answer any queries that may arise before and during the course of the intended study.

Purpose of the research

The objective of this survey is to assess the knowledge of analgesics used in the Accident and Emergency Department in Kenyatta National Hospital, Critical Care Unit. It will further aid in highlighting the challenges faced in trying to improve the care offered to patients who present with pain at the department.

Research Intervention

This research will not involve any interventions

Participant selection

You were selected to join the study using the consecutive sampling of all the nurses and doctors working in the accident and emergency department of Kenyatta National Hospital.

Voluntary Participation

Your participation in this research is entirely voluntary. You are free to withdraw from the study.

Duration

The research is intended to take place between February 2012 and March 2012. During that time questionnaires will be distributed to all selected participants and submitted back on the same day.

Risks

By participating in this research you will not be exposed to any risk.

Benefits

The benefits from the study are mainly towards improving the care offered to patients presenting with pain, in the best manner, using the resources at hand.

Confidentiality

The information that I collect from this research project will be kept confidential. Any information about you will have your initials to which a serial number will be assigned instead of your name.

Who to Contact

If you have any questions you may ask them now or later, even after the study has started. If you wish to ask questions later, please use the contacts below:

Dr.Christine M. Gathiri (Researcher) – **0722 402115**; muthonig@yahoo.com

Dr.Patrick Olang' (Supervisor) – **0722 523116**; patrick.olang@uonbi.ac.ke

This proposal has been reviewed and approved by the Kenyatta National Hospital/University of Nairobi Ethics and Research Committee.

PART II: *Certificate of Consent*

I have read the foregoing information. I have had the opportunity to ask questions about it and any questions that I have asked have been answered to my satisfaction. I hereby consent to participate in this research.

Serial no. of Participant:.....

Date:

Statement by the researcher

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

Name of Researcher.....

Signature: Date:

APPENDIX 4

STUDY QUESTIONNAIRE

PART ONE

SERIAL NO. _____

1. Sex: a) Male ()

b) Female ()

2. Age: a) 25-34 years ()

b) 35-44 years ()

c) 45-54 years ()

d) > 55 years ()

3. Cadre a) Nurse ()

b) Doctor ()

If a nurse go to No. 4

If a doctor go to No. 5

4. Cadre of a nurse a) Qualification _____

b) Years of working _____

5. Qualifications of a doctor

a) Medical Officer

b) Senior House Officer

c) Consultant

6. Speciality

a) Medicine ()

- b) General Surgery ()
- c) Orthopaedic surgery ()
- d) Neuro Surgery ()
- e) ENT Surgery ()
- f) Obstetrics and Gynaecology ()
- g) None ()

7. How long have you worked in the Accident and Emergency department?

- a) < 5 years ()
- b) 5-9 years ()
- c) 10-14 years ()
- d) 15-19 years ()
- e) >20 years ()

PART 2

1. Which are the commonly available analgesics in the accident and emergency department?

- a) NSAIDS eg. Diclofenac ()
- b) Paracetamol ()
- c) Tramadol ()
- d) Pethidine ()
- e) Morphine ()
- f) Entonox
- g) Ketamine ()

2. Who normally prescribes the analgesia?

- a) Triage nurse ()
- b) Doctor ()

3. Do you normally repeat the analgesic after sometime?

- a) Yes ()
- b) No ()
- c) Maybe ()

4. What normally determines the analgesic prescribed?

- a) Availability ()
- b) Age of the patient ()
- c) Condition causing pain ()
- d) Fear of adverse effects ()
- e) Speed of onset of action ()
- f) Route of administration ()

5. Which is the commonest route of administration?

- a) Oral
- b) Intravenous
- c) Intramuscular
- d) Inhalational
- e) Subcutaneously
- f) Nerve blockade

6. Why? _____

PART THREE

1. Would the introduction of pain management guidelines improve pain management in the accident and emergency department?

- a) Strongly agree
- b) Moderately agree
- c) Agree
- d) Moderately disagree
- e) Strongly disagree
- f) I do not know

2. Do you feel that regular courses on effective pain management would be useful in your practice of pain management?
 - a) Strongly agree
 - b) Moderately agree
 - c) Agree
 - d) Moderately disagree
 - e) Strongly disagree
 - f) I do not know

PART FOUR

CLINICAL SCENARIOS

WHAT ANALGESIC WOULD YOU USE IN THE FOLLOWING SCENARIOS? ROUTE OF ADMINISTRATION.

1. A 23 year old female with a compound fracture of the tibia fibula in severe pain.
 - Normal procedures practiced at triage.
 - 60kg; no medical problems
 - Pain is moderate to severe
 -

2. An 80 year old female with a fracture neck of femur with pain at rest
 - Frail, pain at rest
 - 55kg, no major medical problems

3. An 18 year old male with a sprained ankle in pain
 - Sports injury, difficulty in bearing weight
 - No underlying fractures
 - Insisting on analgesia
 - 70kg, no major medical problems

4. A 45year old male with severe abdominal pain
 - Not colicky, abdomen is rigid
 - Haemodynamically stable
 - 80kg, reduced urine output

5. A 60 year old male with acute MI in pain
 - Haemodynamically stable
 - 75kg, no major medical problems

6. A 2year old female with 25% partial thickness burns in distress
 - No burns to the face
 - 12kg: no medical problems
 - IV access attainable

7. A 28 year old male with crush injury of the right lower limb
 - Haemodynamically unstable
 - History of loss of consciousness
 - Current GCS is 15/15

PART FIVE

1. What challenges do you face as an accident and emergency staff that hinders effective pain management?
 - a) Lack of appropriate drugs
 - b) High numbers of patients
 - c) Low numbers of staff
 - d) Lack of guidelines for proper pain management
 - e) Other

2. What tools do you use to assess pain at triage or consultation?
 - a) Visual analogue scale
 - b) Wong baker facial scale
 - c) Numerical rating scale
 - d) Verbal rating scale
 - e) None

3. What can the administration do to improve effective pain management in the accident and emergency department?

THANK YOU!!

WORK PLAN

ACTIVITY	2011 July	2011 Sept	2011 Oct	2011 Nov	2011 Dec	2012 Jan	2012 Feb	2012 Mar	2012 Apr	2012 May
<i>Proposal Writing</i>	✓	✓	✓	✓	✓					
<i>Proposal Presentation</i>						✓				
<i>Presentation to Ethical Review Committee</i>						✓	✓			
<i>Data Collection</i>							✓	✓		
<i>Data Processing</i>									✓	
<i>Report Writing</i>									✓	
<i>Study Presentation</i>										✓

BUDGET

Item	Total cost (KShs)
Biostatistician Fee	15,000
Stationary & Related printing costs	10,000
Internet hours	2000
KNH/UoN Ethics & Research Committee fee	1000
Phone call costs	1000
Miscellaneous	1000
<i>SUBTOTAL</i>	30,000
<i>10% Contingency</i>	3,000
GRAND TOTAL	33,000