ASSESSING FACTORS CONTRIBUTING TO OPIOID ABUSE AMONG NURSES WORKING IN A TERTIARY REFFERAL HOSPITAL, NAIROBI, KENYA

BY

THIGA ANTHONY KINGORI

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF PUBLIC HEALTH

SCHOOL OF PUBLIC HEALTH AND COMMUNITY DEVELOPMENT

MASENO UNIVERSITY

© 2019
DECLARATION

1. Student

I Thiga Anthony Kingori do hereby declare that this is my original thesis and has not been submitted for award of degree or diploma in any other University or College.

Thiga Anthony Kingori
EL/ESM/00406/2013
Signature……………………….. Date-…………………………...

2. Supervisors

We, the undersigned, confirm that this thesis has been submitted for examination with our approval as university Supervisors:

Prof. R. Onyango
School of Public Health and Community Development
Maseno University

Signature……………………….. Date-…………………………...

Prof. David Sang
School of Public Health and Community Development
Maseno University

Signature……………………….. Date-…………………………...
ACKNOWLEDGEMENT

First, I thank almighty God for renewing my hope and strength during my period of study. I sincerely thank my supervisors who have been a real inspiration. Prof, Rosebella Onyango and Prof David.Sang for their professional, tireless efforts and not giving up on me, I surely remain indebted, thank you very much. Special thanks to Mr. Geoffrey Olado ,Carolyne Ambuyo, Ruth Oduogo for their unwavering and timely help may the Lord richly bless you. The Kenyatta National Hospital management and also Research and Training Department (KNH) for their guidance and financial support. In addition, a lot of thanks to Mr. Wycliffe Ayieko (UoN), Mark Mbiro (KNH) and Chris Ngungu (KNH), for their professional guidance and support, Thanks very much. I cannot forget all respondents who consented to participate in the study, Thanks very much. Finally, to my family members for their love, support and encouragements, may God richly bless you.
DEDICATION

To my dear wife Tabitha Njeri who gave me love, support and encouragement. To my children Florence and Jackson for their love, patience and support. To my father late Jackson Thiga who taught me value of discipline and hard work. To my mother Florence Wanjiku who gave me moral, financial and inspirational support.
ABSTRACT

Addiction among health providers is a significant but undocumented cause of death globally. The non-talked about behavior is increasing day by day. In Kenya, drug and substance abuse is an increasing public health problem. The medical professionals are particularly at increased risk of abusing drugs at their disposal meant for prescription and non-prescription purposes. Such drugs for example are the opioids, sedatives, tranquilizers, alcohol, caffeine, nicotine, and cannabis among others. Opioids are drugs controlled by dangerous drugs act; they are normally administered on prescription only. The problem of opioid abuse in Kenyatta national hospital had been noted to be on a rising trend. This was particularly among nurses who administered these drugs and were also the major custodians. Kenyatta hospital is the apex of referral system in Kenya situated within Nairobi city capital, hence increasing risk of accessibility to drugs from within the capital. The main objective was to assess the contributing factors of opioid abuse among nurses working in Kenyatta National Hospital. The specific objectives were: to determine the prevalence of opioid abuse among nurses, to identify the major medical opioid abused by nurses, and to explore the measures taken to nurses identified with opioid abuse. This was a descriptive cross-sectional design. A sample size of 343 nurses was desired from a population of 1,664 calculated using Fishers et al (1998) formula. Female nurses were 1,374(82.6%) while males were 290(17.4%). Multistage sampling technique was used to get the distribution of study participants based on gender and department of work. Simple random sampling was used to select 284 female nurses and 59 male nurses. Data was collected through self-administered questionnaires, closed for quantitative data and open for qualitative data. The responses were assigned numerical values according to data type. Continuous data was analyzed and summarized as frequencies and proportions. Categorical data was also analyzed and displayed by use of frequencies and proportions. Results of this study revealed that opioid abuse among nurses is an emerging public health threat with a prevalence of 14 nurses been abusers in every 100 nurses. The factors contributing to this trend was mostly due to Peer pressure, 46.5% closely followed by family problems 46.2% availability of substance 43.6% and coping with stressful hospital conditions 43%. Apart from opioids, the study also revealed that abuse of other substances is also high. Alcoholic beverages been the most used by 52.3% of the respondents, this was followed by sedatives or sleeping pills 17.1%, Opioids 14.0%, tobacco products 11.3%, cannabis 10.0%, amphetamines 4.3%, inhalants 2.3% and finally hallucinogens 2.1%. The recommendations of the study were to explore further on extent of abuse among other clinicians, and for the hospital to support the existing employee drug addiction assistance programme. The study concludes that nurses are increasingly abusing opioids. It is recommended that medical staff who self report as opioid abusers should be treated with positive consideration and non punitive measures of rehabilitating them should be initiated.
# TABLE OF CONTENTS

DECLARATION .................................................................................................................. ii

ACKNOWLEDGEMENT ..................................................................................................... iii

DEDICATION ..................................................................................................................... iv

ABSTRACT ....................................................................................................................... v

TABLE OF CONTENTS ..................................................................................................... vi

LIST OF ABBREVIATIONS ACRONYMS ........................................................................ ix

OPERATIONAL DEFINITION OF TERMS ...................................................................... x

LIST OF TABLES ............................................................................................................. xi

LIST OF FIGURES .......................................................................................................... xii

## CHAPTER ONE: INTRODUCTION ......................................................................................... 1

1.1 Background Information ............................................................................................. 1

1.2 Statement of the Problem ............................................................................................ 5

1.3 Aim and Objectives ..................................................................................................... 6

  1.3.1 The Specific Objectives ....................................................................................... 6

1.4 Research Questions ..................................................................................................... 7

1.5 Justification / Significance .......................................................................................... 7

1.6 Scope and Limitations ................................................................................................. 7

1.7 Theoretical Framework ............................................................................................... 8

  1.7.1 The change process and the Trans Theoretical Model .......................................... 8

  1.7.2 Continuum-of-Care Model .................................................................................. 9

  1.7.3 Relevance of the Theories ................................................................................ 10

1.8 Conceptual Model ....................................................................................................... 11

## CHAPTER TWO: LITERATURE REVIEW .............................................................................. 12

2.1 Introduction ................................................................................................................... 12

2.2 Prevalence of Opioid Abuse in Kenya and America .................................................. 13

2.3 Factors Contributing to Substance Abuse among Nurses ........................................ 13

  2.3.1 Demographic Factors ......................................................................................... 13

  2.3.2 Drug Factors .................................................................................................... 14

  2.3.3 Confounding Factors ......................................................................................... 14
2.4 Major Medical Opioid and other Drugs Commonly Abused by Nurses ........................................ 15
2.5 Workplace Behaviour of Opioid Nurse Abusers ............................................................................. 16
2.6 Measures taken to Manage Opioid Abuse by Nurses .................................................................... 18
   2.6.1 Medication Management in the Treatment of Opioids use Disorder .................................... 19
2.7 Summary of Knowledge Gaps in the Literature ............................................................................. 19

CHAPTER THREE: METHODOLOGY ........................................................................................................ 21
3.1 Introduction ........................................................................................................................................ 21
3.2 Study Area ......................................................................................................................................... 21
3.3 Study Population ............................................................................................................................... 21
3.4 Research Design ............................................................................................................................... 21
   3.4.1 Sample Size Determination ........................................................................................................ 22
   3.4.2 Sampling Technique ..................................................................................................................... 22
   3.4.3 Variables ....................................................................................................................................... 24
3.5 Research Instruments ......................................................................................................................... 24
   3.5.1 Semi Structured Questionnaire .................................................................................................... 24
   3.5.2 Data Collection Techniques ......................................................................................................... 25
   3.5.3 Inclusion Criteria .......................................................................................................................... 25
   3.5.4 Exclusion Criteria .......................................................................................................................... 25
   3.5.5 Validity and Reliability ................................................................................................................ 25
3.6 Data Analysis and Presentation ......................................................................................................... 25
3.7 Ethical Considerations ....................................................................................................................... 26

CHAPTER FOUR: RESULTS ...................................................................................................................... 27
4.1 Introduction ......................................................................................................................................... 27
4.2 Socio-demographic Information ........................................................................................................ 27
   4.2.1 Socio-demographic Profile of the Study Participants .................................................................... 27
4.3 Prevalence of Opioid Abuse among Nurses at Kenyatta National Hospital .................................. 28
   4.3.1 Substances Ever used by the Respondents ................................................................................... 28
   4.3.2 Frequency of using the Drugs in the Past Three Months .............................................................. 30
   4.3.3 Extent of Drug Use ....................................................................................................................... 30
4.4. Factors Contributing to Substance Abuse Among Nurses at Kenyatta National Hospital .... 31
4.4.1 Provision of Direct Care to Patients

4.4.2 Proportion of Respondents Admitted to KNH due to Sickness

4.5 Medical Opioids Abused by the Respondents

4.5.1 Number of Respondents’ Colleagues Abusing Drugs

4.5.2 Distribution of Opioid addiction Rates between Males and Females

4.6 Workplace Behaviour of Respondents Abusing Substances

4.6.1 How the Controlled Substances Abusers were Discovered

4.6.2 What happened to the Victim following Discovery

4.6.3 Problems Associated with Substance Abuse

4.6.4 Existence of Policy in the Department on Drug use

4.6.5 Opinion of Respondents on the Incidence of Abuse of Opioids

4.7 Activities Undertaken to Address Drug Abuse

4.7.1 Measures taken to Identify Abuse

4.7.2 Ever been Sensitized on Provisions of Alcohol and Substance Abuse Policy

4.7.3 Availability of Policy Document Copy for Staff

4.7.4 Issues that the Respondents Recommended to be included in the Policy

4.7.5 Proportion of Respondents aware of Activities to Address Drug Abuse

CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

5.2 Discussion of Findings

5.3 Conclusions

5.4 Recommendations

5.5 Suggestions for Further Research

REFERENCES

APPENDICES
# LIST OF ABBREVIATIONS ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIDS</td>
<td>Acquired Immune Deficiency Syndrome</td>
</tr>
<tr>
<td>ANA</td>
<td>American Nurses Association</td>
</tr>
<tr>
<td>CCM</td>
<td>Centers of Substances Abuse Treatment</td>
</tr>
<tr>
<td>GABA</td>
<td>Gamma Amino Butyric Acid</td>
</tr>
<tr>
<td>HIV</td>
<td>Human Immune Deficiency Virus</td>
</tr>
<tr>
<td>KEMRI</td>
<td>Kenya Medical Research Institute</td>
</tr>
<tr>
<td>KNH</td>
<td>Kenyatta National Hospital</td>
</tr>
<tr>
<td>NACADA</td>
<td>National Authority for Campaign against Drug Abuse</td>
</tr>
<tr>
<td>NGOS</td>
<td>Non-Governmental Organizations</td>
</tr>
<tr>
<td>OTPs</td>
<td>Opioids Treatment Programs</td>
</tr>
<tr>
<td>PEPFAR</td>
<td>President Emergency Plans for Aids Relief</td>
</tr>
<tr>
<td>REM</td>
<td>Rapid Eye Movement Sleep</td>
</tr>
<tr>
<td>SAMHS</td>
<td>Substance Abuse and Mental Health Services</td>
</tr>
<tr>
<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
</tr>
<tr>
<td>STI</td>
<td>Sexually Transmitted Infections</td>
</tr>
<tr>
<td>TTM</td>
<td>Trans Theoretical Model</td>
</tr>
<tr>
<td>UoN</td>
<td>University of Nairobi</td>
</tr>
<tr>
<td>U.S</td>
<td>United States</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
</tbody>
</table>
OPERATIONAL DEFINITION OF TERMS

Addiction - it is the inability to stop taking opioids despite serious health, economic, vocational, legal, spiritual and social consequences.

Habituation - increased need or desire to use a substance with no increase in dose or frequency.

Drug - Any substance, legal or illegal which when consumed affects the normal functioning of the central nervous system by depressing or stimulating.

Drug abuse - is repeated self-administration of a drug for no medical reasons.

Opioid - a class of drugs that has similar actions to those of opium.

Opioid abuse - is the continued use of opioid drugs for non-therapeutic purposes.

Opioid dependence - individual reliance to opioids to carry out normal body functions.

Prevalence - a measure of frequency rate of nurses addicted to opioids in comparison to the total nurse employees.

Substance - alcohol, drug, or any chemical used for intoxication purpose.

Substance abuse - it is the use of drugs and opioids for non-therapeutic purposes.

Substance dependence - the over-reliance on drugs use, or chemical to carry out normal activities.

Tolerance - develops when larger doses of opioids are required to achieve desired effects.

Withdrawal - is the cessation or reduction in intake of a regularly used substance.

Workplace behavior - actions portrayed or done repetitively in occupational settings by nurses following opioid abuse.
LIST OF TABLES

Table 3.1: Distribution of nurses’ population in KNH (Sampling frame) ...........................................23
Table 3.2: Distribution of the sample ..............................................................................................................23
Table 3.3: Distribution of additional 10% .............................................................................................................24
Table 4.1: Socio-Demographic Characteristics (n=344) .................................................................................28
Table 4.2: Substances ever used by the respondents (n=344) ..........................................................................29
Table 4.3: Frequency of using the drugs in the past three months (n=344) .......................................................29
Table 4.4: Extent of drug use (n=344) ..............................................................................................................30
Table 4.5: Factors contributing to substance abuse among nurses at KNH ..................................................31
Table 4.6: Number of respondents’ colleagues abusing drugs (n=344) .........................................................34
Table 4.7: Distribution of opioid addiction rates between males and females .................................................34
Table 4.8: How the controlled substances abusers were discovered (n=344) ..................................................35
Table 4.9: Opinion on incidences of opioids use among respondents (n=344) ..............................................38
Table 4.10: Reasons contributing to increasing incidences of opioids abuse (n=344) ...............................38
Table 4.11: Respondents recommendations on issues to be included in the policy .................................40
Table 4.12: Activities Undertaken to Address Drug Abuse (n=59) .................................................................41
LIST OF FIGURES

Figure 1.1: Conceptual model .................................................................11
Figure 4.1: Proportion of respondents providing direct care to patients (n=344)...........32
Figure 4.2: Proportion of respondents admitted to KNH due to sickness (n=344) ..........33
Figure 4.3: Distribution of addiction rates between males and females ......................35
Figure 4.4: What happened to this person following discovery (n=344) .........................36
Figure 4.5: Problems associated with substance abuse(n=344) .................................37
Figure 4.6: Existence of policy in the department on drug use (n=344) ......................37
Figure 4.7: Proportion sensitized on Provisions of alcohol and substance abuse policy....39
Figure 4.8: Availability of Policy Document Copy for Staff (n=344) .........................40
Figure 4.9: Proportion of respondents aware of Activities to Address Drug Abuse (n=344)41
Figure 4.10: Activities Undertaken to Address Drug Abuse. .................................42
CHAPTER ONE
INTRODUCTION

1.1 Background Information

Opioids are a class of drugs that has similar actions to those of opium. The following drugs are directly derived from opium: Codeine, Morphine, and Heroin. From these drugs, there are also some drugs that are derivatives. For instance, Vicodin and Demerol are both derived from Morphine. Semi-synthetic drugs contain a combination of Morphine and synthetic material, they include: Oxycodone, Hydrocodone and Hydromorphone. Synthetic drugs that act as opiates like opium derivatives do not actually contain any opium in them. These drugs are actually created in laboratories and have similar effects as opium and they may cause similar side effects. They include methadone, buprenorphine, pethidine dextropropoxyphane and pentazocine (Opium.org 2007).

Although the substance abuse and mental health services administration survey of 2004 estimates that opioids abuse among the general population in the United States of America has consistently remained at 8% since 2002-2003, determining the incidence and factors contributing to abuse among health care providers is particularly difficult. This is due to sensitivity of the issues, legal issues associated with practice and implications for patient care (Sarafini 2018). These factors discourage disclosure and it is likely that any reports underestimate the problem. Drug and substance abuse especially of those meant for therapeutic purposes is becoming an increasing threat to vulnerable medical workers (Lohman et al 2010). The abusers compromise their own safety and those of patients and other co-workers in their line of duty.

Opioid dependence develops following periods of regular use. Over time, regular use of opioids develops tolerance towards it. This means that larger doses of the same are required to get a high or to prevent withdrawals. When an individual stops opioid use, the body loses tolerance to the effects of opioids. This loss of tolerance develops in 3-4 days and it is usually the major reason for opioid overdose or dependence. Overdose may result in a person’s inability to carry out normal body functions, suppress rapid eye movement (REM) sleep, and one may pass out. Moreover, in extreme cases, one may develop heart failure or experience convulsions. (Substance Abuse and Mental Health Services Administration, 2004) (SAMHSA). The factors
that factors that contribute to substance abuse at KNH including opioid abuse trends were therefore not known hence the need for this study to fill this gap.

At the global level, opioid addiction first emerged as a serious problem in U.S after the civil war. At that time, opioids were prescribed widely to alleviate acute and chronic pain, other types of discomfort and stress. By late 19th century, two thirds of those addicted to opioids were middle and upper class white women (Brecher, 1972). Many of the substances abused today, including opioids-primarily opium, morphine, heroine and some prescription opioids, gained their popularity as curatives, or as ingredients in commercial products ranging from pain exins and cough suppressants to beverages. These were provided by physicians-pharmacist and others in the healing professions (SAMHSA, 2004).

Opioids were often the best available substance to relieve pain in civil wars and battle fields. As early as 3000BC, Greeks, Romans and Arabs used opioids for many more purposes including recreation. The invention of hypodermic needle 1856 in the US escalated morphine abuse because doctors believed that injected morphine did not travel through digestive system and there would be no craving for the drug. This was, however, a wrong assumption. The influx of Chinese immigrants, who smoked opium, introduced smoking of opium in North America creating opium smoking dens. This is when they came to participate in the California Gold Rush. This led to the nation enacting anti drug laws. Opium eradication campaigns thus drove opium smoking underground (SAMHSA, 2004).

Still globally, it is estimated that a total of 246 million people or 1 out of 20 people between the ages 15-64 years used illicit drugs in 2013 (UN, 2015). The exact prevalence of opioids abuse in India, US and Africa is however not known (Bhatia, 2004). According to Wright, (2012), abuse and dependency on potent opioids have long been recognized as a problem among nurse anesthetists and anesthesiologists. It is no secret that health care providers have problems with substance abuse and chemical dependency. In particular, opioids and other anaesthetics such as propofal are common drugs of abuse among anesthesia practitioners. Factors that have been proposed to explain the high incidence include their easy accessibility, high stress environment, knowledge of the drug effects and occupational exposure.
In America, prescription drug epidemics involving doctors, nurses and other medical professionals usually involve narcotics such as oxycodone, and fentanyl. Their knowledge and accessibility makes their problems especially hard to detect (Hansen, & McClendon, 2014). According to Sarafini (2018), opioids constitute palliative care medicine for pain relief in life threatening illnesses such as cancer. Studies in American states have established that withdrawal of opioids may lead to pain and withdrawal symptoms. Moreover, clinicians and physicians feel caught in the middle since they have to acknowledge the national crisis of opioid addiction and wanting to adhere to new guidelines on how to use the opioids specifically to reduce patients’ pain.

It is reported further that in the United States in 2016, 115 Americans addicted to opioids died from opioid overdoses (Lohman et al 2010). Consequently, the State of Massachusetts has enacted laws limiting opioid use except in cases of chronic pain. Opioid use disorder among patients has also been reported. Globally, the toll from opioid addiction is great hence the need to stem addiction and deaths due to overdose. Chronic pain patients, however, have a legitimate need for opioids which should be administered under keen monitoring. In Pennsylvania State, some clinics have eliminated opioids from their practice completely (Sarafini 2018). Similarly, Kansas State was considering legislation that would require the state pharmacology board to set alarms if prescription numbers or dosages exceeded a certain level.

In Sub-Saharan Africa, Dr. John Guffson reports that in South Africa, a rehabilitated morphine addict who later turned to pethidine, says that nurses abuse pethidine because they can access it easily. Firstly, in Ghana, doctors and nurses are reported to have abused pethidine and some have even died following periods of chronic abuse. In Karle Bu teaching hospital in Ghana, a nurse was struck off the register after she altered patient record prescriptions to get an extra patch of pethidine (Donnir, 2014). In Zimbabwe, a study by Ngomeni (2016) reported that health practitioners supported use of non-narcotic pain relievers such as ibuprofen instead of opioids. It was also suggested that non-pharmacologic treatments such as yoga could be used.

In Kenya, opioid use for health purposes is recognized. As many as 90 pc of patients with advanced cancer or HIV/AIDS experience moderate to severe pain. These patients need opioids
such as morphine which are prescribed to help ease pain. The Kenya Ministry of Health recognizes that pain needs to be properly assessed and treated using the appropriate medications as recommended by WHO. Morphine is one of the painkillers classified by the WHO as a first line drug hence the Kenya government’s effort to supply it beginning from the largest national referral hospital, KNH.

Consequently, the Kenya Hospices and Palliative Care Association has been vocal in advocating for easy access and appropriate use of oral morphine in Kenya. Therefore, in April 2017, KEHPCA facilitated the manufacturing of Oral Morphine Solution at Kenyatta National Hospital. The opioids produced through this initiative were used at Kenyatta National Hospital and the second batch was distributed to major hospitals across the country.

Drug abuse problem, which includes abuse of opioids, represent a significant public health problem with far reaching ramifications ranging from poor health outcomes to diminished production in all sectors of the economy, insecurity and non-attainment of national development goals (National Authority for Campaign against Drug Abuse, 2012). Drug abuse in the medical context becomes a cause for greater concern due to the health effects on the staff and patient. For instance, in 2018, the Daily Nation reported that a nurse at Kitui hospital had confessed to addiction and abuse of opioids meant for medical treatment. The nurse went into a three-year dependence on Pethidine and Morphine. These are some of the strongest and most addictive painkillers. One shot gave him a euphoric feeling similar to what he experienced from heroin and he got hooked. According to the nurse, he said that compared to heroin, cocaine and bhang, Pethidine and Morphine do not give one a hangover or leave one emitting a pungent smell.

To demonstrate the addictive power of the opioids, the nurse said: “Pethidine grabs a hold of you, and it won’t let go. It turned me into somebody I never thought I would be. Once you are hooked, it is almost like a relationship with a person you love.” (Daily Nation 2018). This particular case suffered withdrawal syndrome and had to return to heroin due to aching bones, lack of energy, roughed up intestines, vomiting and inability to make clear decisions. It was therefore felt timely to conduct our study to determine the major medical opioid most commonly abused at KNH.
Moreover, Dr Njagi, a psychiatrist and addiction expert who runs a rehab centre, says the level of stress and fatigue experienced by health professionals can easily push them to abuse prescription opioids. This is a silent public health problem that requires scholarly investigation since, according to the United Nations Office on Drugs and Crime, only one in ten people who suffer from opioid dependence globally receive treatment. This situation made it necessary to investigate the workplace behaviour of nurses addicted to opioid abuse at KNH as this may affect their performance and endanger the patients under their care.

According to NACADA (2015), Kenya has a staggering 2.65 million drug addicts, a baseline survey conducted in 2019, attested that two in every ten Kenyans are addicted to drugs. In 2016, there were 1338 drug related deaths in Kenya, 3-4 of which were attributed to opioids abuse. It was therefore imperative to determine the state of opioid abuse among nurses at KNH which is the largest referral facility in Kenya. In Kenya a public service substance abuse work policy was launched in 2017 to guide employers to regard substance abuse as an illness and gave guidance of rehabilitating and retaining recovering addicts in public service. The practical interventions taken by the administration at KNH to control opioid abuse therefore informed our fifth objective.

The dangerous drugs Act Cap 245 in Kenya prohibits any person from importing or exporting raw opium or cola leaves except under license. The Act directs that drugs containing extracts of such plants should be supplied on prescription only by licensed medical practitioners. At Kenyatta National Hospital, the dangerous drugs are normally supplied by one pharmacy and requisitioned by Nurse Managers. The drugs are then stored under double lock and key where they are administered by two qualified nurses who have to countersign upon administration.

1.2 Statement of the Problem
The necessity to use opioids for medical pain relief is recognized and promoted by the World Health Organization. However, the risks associated with opioid abuse by health workers have necessitated interventions by individual national government health departments in many parts of the world. For instance, in United States, nursing specialties, such as anesthesia, critical care, oncology, and psychiatry, are believed to have higher levels of substance abuse because of intense emotional and physical demands, and the availability of controlled substances in these
areas. In Kenya, the government policy through NACADA is to control drug administration and no form of drug abuse, including opioids is condoned. Jalango (2015) observes that the incidence and risk factors for substance abuse among clinical health providers has been on a rising trend. He noted that one in eight of all opioid abusers is in East Africa. According to anonymous key informants in Kenyatta Hospital about 1 nurse in every ward is addicted to opioids. Opioid dependence rate among nurses in Kenya therefore remains a topic of debate because nurses are in the medical field, and they are aware of the signs of substance abuse. This makes them very good at hiding the signs and symptoms of their own use from others for extended lengths of time. There is no statistical documentation available to explain the factors that predispose nurses to abuse medical painkillers in Kenya. It is therefore pertinent to establish the extent of opioid abuse at Kenyatta National Hospital which is Kenya’s largest teaching and referral hospital and is an indicator of the efficacy of the entire national healthcare system.

1.3 Aim and Objectives
The aim of this study was to assess the factors contributing to opioid abuse among nurses working at Kenyatta National Hospital. To assess opioids abuse and its determinants amongst nurse employees at Kenyatta National Hospital

1.3.1 The Specific Objectives
(i) To determine the prevalence of opioid abuse among nurses working at Kenyatta National Hospital.

(ii) To investigate factors contributing to substance abuse among nurses working at Kenyatta National Hospital.

(iii) To determine the major medical opioid that is commonly abused by nurses at Kenyatta National Hospital.

(iv) To establish the workplace behaviour of nurses addicted to opioids at Kenyatta National Hospital.

(v) To explore the measures taken to manage nurses identified with opioid abuse at Kenyatta National Hospital.
1.4 Research Questions

(i) What is the prevalence of opioid abuse among nurses working at Kenyatta National Hospital?

(ii) What are the factors contributing to substances abuse among nurses working at Kenyatta National Hospital?

(iii) What are the major medical opioids commonly abused by nurses working at Kenyatta National Hospital?

(iv) What are the work place behaviours of opioid addiction among nurses working at Kenyatta National Hospital?

(v) What are the measures taken to rehabilitate nurses identified with opioid abuse at Kenyatta National Hospital

1.5 Justification / Significance

In terms of policy, the findings of this study can inform the hospital administrators on storage, administration and control of opioid drugs as well as instituting stringent monitoring and stock control of these essential drugs.

At the level of practice, nurses will be more self aware and can monitor the effects of opioids on the service delivery and social well being of their fellow nurses and patients. Self-regulation and peer counseling among nurses may minimize the emerging trend of widespread but unreported abuse of drugs leading to artificial shortage and patient suffering. This study will also help medical institutions in considering using alternative drugs less prone to addiction but with similar therapeutic effects.

This study has generated data to demonstrate the extent of opioid abuse and the predisposing factors. This knowledge can be used for comparative purposes and the methods we have used here can be replicated in level 5 and level 4 hospitals to establish whether the trend of opioid abuse is the same across Kenya.

1.6 Scope and Limitations

The study was restricted to nurses who are employed permanently by the Kenyatta National Hospital. The drugs being investigated are those that could be accessed by the nurses and which they are responsible for administering to patients within the hospital. The drugs used or abused outside the facility, were therefore not covered. The study was limited by fear of reprisals that could have made voluntary participation and consenting slow. This was later mitigated by
assuring the participants that the study was for academic purposes only and that their identity would not be published at any stage of the study. They were also free to withdraw from the study at any time.

1.7 Theoretical Framework

1.7.1 The change process and the Trans Theoretical Model

The Trans theoretical Model (TTM) focuses on how people change, unlike most treatment theories, which focuses on the psychopathology or the problems in need of change. TTM involves emotions, cognitions and behavior and approaches change as temporary process and not an event, much like substance disorder. TTM describes how people can modify a behavior, change a problematic behavior and acquire and create new patterns of behavior over a period of time.

The method differentiates between natural change and the TTM process. Natural change occurs when people make changes based on life events such as marriages or the birth of a child while the TTM process when people make changes that are based on altering their behaviors such as quitting smoking or exercising for better health (DiClemente, Bellino & Neavins, 1999).

TTM has four general elements that include, the stages of change, the processes of change, the markers of change and the content of change. These elements promote understanding of how the changes occur, which is understanding that can be helpful in therapy. TTM attempts to change a person’s behavior by moving them from through five distinct stages: Pre – contemplation, Contemplation, Preparation, Action, and Maintenance (Prochaska, DiClemente & Norcross, 1992).

In the pre – contemplation stage the person is yet considering change or is unwilling or unable to change. The stage is generally six months or longer. The person does not yet fully appreciate or connect any negative consequences with his/her behavior. In the contemplation stage the person considers the possibility of change but remains ambivalent and uncertain. The time frame for this stage is also about six months. The person knows the pros and cons of changing his/her behavior but he/she continues to ambivalent about the need for altering the behavior in spite of the negative effects. Often, the person in stage is called a chronic contemplator because he’s / she’s always planning to change his/ her behavior. In preparation stage the person is finally committed
to change is planning to make these changes in the near future but is still actively deciding how to do it. Anticipated change is within one month. The person may already be making small alterations toward the target behavior (Prochaska, DiClemente & Norcross, 1992).

The person in the action stage is actively taking steps to change the target behavior but still not stabilized the results. However, the behavior has changed in the past six months and therefore has lessened the negative consequences of his/her behavior. In the maintenance stage the person has achieved change, has stabilized the results and is maintaining the new behaviors. However, not everyone will be able to alter their negative behaviors over the long term. The maintenance stage can sometimes be tricky. Those with a substance use disorder have been known to drop out of treatment relapse following a brief improvement.

When someone does revert to an earlier stage of change then regression will follow. Relapse is one form of regression and people can regress from any stage back to an earlier one. Relapse and recycling through the stages occurs frequently as people try to modify or stop negative behaviors. A relapse can prove to be more than the rule rather than the exception within addictions. The Trans theoretical Model even states that a person does not move in a linear fashion but in more of a spiral pattern, progressing back and forth through the various stages (Prochaska, DiClemente & Norcross, 1992).

1.7.2 Continuum-of-Care Model
The continuum-of-Care model supports the idea of an ongoing following-up with individual, which starts with an early identification and continues throughout the process of treatment and aftercare (Deitch, Koutsenok & Marsolais, 2005). This model recognizes that different individuals may need different levels of intervention and treatment at different times during the process of their recovery efforts. Treatment for a substance use disorder may be even more effective if it moves away from an acute care model of treatment and goes toward the chronic care model of treatment that is offered with other chronic relapsing diseases (White, Boyle, & Loveland, 2003). The high dropout rates from treatment aftercare, the attrition from any ongoing participation in continuing care and the high relapse rate after completion of treatment is partially attributed to the short term model of treatment. Long term recovery management seeks to improve the success rates by removing the stigma of addiction treatment and empowering the
individual and his/her community to partner with treatment providers just as he/she already does with primary care providers.

The principles of the recovery management model involve swift admission into further treatment, intensive case management and motivational interventions to achieve compliance with treatment objectives (Dennis, Scott, & Funk, 2003; White, 2008). The most potent component of this approach is providing recovery management checkups either in person or by phone over an extensive period of time after the discharge from treatment and beyond the typical six months of extended care that is offered in traditional treatment programs. For treatment, keep them engaged in their treatment and retain them in follow-up activities after treatment (Simpson, 2002).

1.7.3 Relevance of the Theories

Both theories recognize that the road map to behavior change involves both biological social and self control factors. The theories emphasizes on both individual, community and society roles in supporting individuals involved in drug abuse to full recovery.
1.8 Conceptual Model

![Conceptual Model Diagram]

Figure 1.1: Conceptual Model
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction
The abuse of drugs by nurses is compounded by their critical roles as care givers. World health Organization (WHO) defines ‘drug’ as any substance that when taken into the living organism, may modify one or more of its functions. Historically, addicted physicians either went unnoticed or were treated punitively, a landmark report entitled “the sick physician” in 1973 in America recommended the establishment of programs to identify and treat sick physicians and since then, every state has a program or a committee for the same purpose (Ross, 2003).

The word addiction is often used as an umbrella term to describe problems that can be broken into drug addiction, alcoholism, substance use and chemical dependence. It’s also used to describe many pleasure-producing and compulsive behaviors. Members of Alcoholics Anonymous (AA), which is an international mutual-aid movement whose primary purpose is to stay sober and help other alcoholics achieve sobriety, call addiction a cunning, baffling and powerful disease. A person with an addiction is unable to stop drinking or taking drugs despite serious health, economic, vocational, legal, spiritual and social consequences. A substance use disorder does not discriminate according to economic class, age, ethnic background, gender or any other labels. A substance use disorder is a progressive and chronic disease and if left untreated can be fatal. The negative consequences of drug abuse and alcoholism affect not only individuals who abuse drugs but also their families and friends and various businesses and government resources. Although many of these effects cannot be quantified, the economic cost of drug abuse in America to taxpayers is a drain of nearly $534 billion each year from increased health care, lost productivity, premature deaths, crime and automobile accidents related to alcohol and drug abuse. More deaths, illness and disability result from substance abuse than any other preventable health condition (NIDA, 2007).

Substance abuse can be classified into four categories which include: substance abuse, substance dependence, habituation and addiction. The criteria which distinguish non pathological substance use from substance abuse include the pattern of pathological use manifested by intoxication, inability to cut down or to stop use, impairment in social or occupational functioning by the pattern of pathological use and duration of disturbance of at least one month. Substance
dependence requires physiological dependence evidenced by either tolerance or withdrawal. Tolerance means that markedly increased amount of the substance is required to achieve desired effect whereas withdrawal produces a specific syndrome following cessation or reduction in intake of a regularly used substance. Habituation means there is an increased need or desire to use a substance with no increase in dose or frequency. It is usually not followed by withdrawal symptoms. Addiction follows a state of periodic or chronic intoxication which is detrimental to the individual and the society (Bhatia, 2004).

2.2 Prevalence of Opioid Abuse in Kenya and America

Objective one was concerned with determining the prevalence of opioid abuse. The literature indicates that the American nurses association (ANA) estimates that six to eight percent of nurses use alcohol or drugs to an extra extent that is sufficient to impair professional performance. Others estimate that nurses generally misuse drugs and alcohol at nearly the same rate of (10 to 15 percent) as the rest of the population. This means that if you work with 10 nurses, one of them is likely to be struggling with a substance use disorder. Although the rates of substance abuse and dependence are similar to those of the general population, and only a very small percentage is ever disciplined, the amount is still disturbing because nurses are the medical care givers who are most often responsible for the health and well-being of the general population (Trinkoff, &Storr, 1998).

Amayo (1994) affirms that substance use is a historical fact and not a new invention, what changes is the types of drug abused and the methods of acquisition. According to the United Nations (2007), drug abuse is generally considered to be on the increase in Kenya, as in most parts of Africa. The absence of reliable and accurate data makes it difficult to convince the public and politicians of the scale and magnitude of the problem, and even more difficult to respond with adequate demand reduction measures.

2.3 Factors Contributing to Substance Abuse among Nurses

Objective two dealt with the factors influencing substance abuse among nurses.

2.3.1 Demographic Factors

Vulnerability to the development of a substance use disorder is multi-factorial and impacted by numerous elements including genetics, family structure, social and work environment, age and
gender. No single factor determines overall risk for development of a substance use disorder. However, as discussed, certain workplace risk factors create a greater vulnerability for nurses to the development of a substance use disorder. But even here the risk varies greatly and most nurses still cope satisfactorily with the unique stressors of nursing such as the life and death consequences of their actions, rotating shifts and constant concerns, while some nurses may find these same factors difficult or impossible to deal with and turn to the misuse of alcohol or drugs (Luck & Hedrick, 2004).

2.3.2 Drug Factors
Consumption of intoxicating substances negatively affects mankind in the health, social, economic and political spheres. Use of alcohol and other intoxicating substances is a social behavior which is embedded in communities. The problem is worsened by constant supply of the substances to maintain the cultures (NACADA, 2012). The study also indicated that the immediate social environment have a major role in influencing drug abuse. From this study we can relate that medical clinicians are also more prone to opioid and especially the synthetic opioid meant to treat pain, as this is particularly what is at their access.

The easy availability of drugs, training in the administration and injection of drugs, a familiarity with and a frequency of administration drugs tends to diminish negative sanctions against self-diagnosis and self-administration and increases the risk for substance abuse (Luck & Hedrick, 2004). Abundance of information about substance effects and sources to include pharmacodynamic characteristics e.g. stimulants are preferred, amount and frequency, less quantity is preferred, routes of administration ingested or inhaled preferred, readily available, cheap and public acceptance of the drug. Genetic factors, to include inherited genetic predisposition to alcohol or drug dependence, deficits in natural neurotransmitters such as serotonin. Risk factors for nurses in the workplace to include, lack of education regarding a substance use disorder, lack of controls, physician prescribing practices and bulling of nurses by colleagues (Clark, 1988).

2.3.3 Confounding Factors
Nursing is a highly stressful occupation particularly with staffing shortages; American studies have shown positive relationships between work schedule characteristics such as shift rotation, weekends on, shift lengths longer than eight hours and overtime to substance abuse. In general, the more adverse the schedule was, the greater the likelihood there would be substances abuse
(Trinkoff, & Storr, 1998). The work schedule most strongly associated with substances abuse was the combination of shift rotation and longer shifts, which had multiple adverse effects. Shift work and long works hours were shown to lead to fatigues, sleep deprivation, circadian rhythm disruption and other psycho-physiological consequences (Geiger-Brown, & Trinkoff, 2010).

Self-medication for pain is always a concern among nurses. Bugle, (1996) compared a group of disciplined nurses to a group of registered nurses who were not disciplined for substance use problems and found 40 percent of disciplined nurses used prescription medication to control chronic pain conditions compared with 20 percent in the comparison group, and 42.5 percent of disciplined nurses used substances for emotional problems compared to six and a half percent in the comparison group. The fourth risk factor is lack of education about substance use disorder, especially by all health care professionals, both academically and professionally, which leads to a lack of awareness about signs and symptoms, a common yet overlooked risk factor. This lack of education also contributes to the negative stereotypes and stigma toward those with substance use disorders, again especially toward nurses and physicians (Chappel, 1992; Grover & Floyd, 1998).

In general, risk factors can be grouped into several categories to include, personality psychological characteristics which are, biological factors, family history, low self-esteem, depressive feelings, curiosity, low frustration tolerance, impulsivity, social non conformity, low religiosity, hostility, antisocial personality traits, feelings of desperation, loss of control over circumstances of one’s life, feelings of resentment, presence of psychiatric disorders such as depression, anxiety neurosis among others. Immediate social cultural milieu, to include: peer pressure, unemployment, low income and laxed legal system (Clark, 1988).

2.4 Major Medical Opioid and other Drugs Commonly Abused by Nurses
Objective three was intended to determine the major medical opioid abused by nurses. In the literature, drugs that are often abused are generally classified into different categories to include Narcotics; opiates such as fentanyl, hydromorphone, hydrocodone, oxycodone, and pethidine. Cannabinoids: marijuana. Depressants: ethanol, barbiturates, and benzodiazepines. Stimulants: nicotine, amphetamines and cocaine. Hallucinogens: lysergic acid diethylamide and ecstasy. Inhalants: toluene and nitrous oxide. Hypnotic anesthetics: propofal or Diprivan. These substances, along with alcohol, can produce a feeling of pleasure, relaxation or relieve negative
feelings (Feltenstein, 2008). As the dependence or addiction progresses the benefits of using substances diminish and more drugs or alcohol are needed to feel the same level of pleasure. Cannabis and Khat are the most widely abused drugs, but heroin and to a lesser extent cocaine and alcoholism are becoming a serious problem in Kenya. According to Amayo, (1994), there are various types of substances/drugs that are threatening the survival of man on earth. These include alcohol, tobacco, narcotics: opium, morphine, heroin, codeine, synthetic analgesics and barbiturates, cannabis: charas, bhang, and hashish, hallucinogens: lysergic acid diethylamide, phencyclidine and mescaline, inhalants: aerosols, gasoline, petrol sprays, and glues, stimulants like amphetamines, cocaine, Khat and caffeine, beverages like coffee, tea, and cola.

2.5 Workplace Behaviour of Opioid Nurse Abusers

Objective four was concerned with establishing the workplace behaviour of nurses that abuse opioids. Using substances that affect brain functions through injection or inhalation has an even stronger and more immediate effect. The brain receives a significant and often deadly jolt of stimulation which alters the brain neurochemistry. However, ingestion will at least give the body time to metabolize the substance and lead to a somewhat mitigated influence on the central nervous system. For nurses, the long hours, extra shifts, staffing shortages and shift rotations pose a unique challenge.

Mind-altering substances affect the Limbic system, which is a primitive system related to arousal that is located deep within the brain and is often called the pleasure center. Impulses move from the middle of the brain (limbic system) to forebrain (the thinking center of the brain) and back again, releasing neurochemicals that influence and modulate brain activity. Dopamine is a naturally occurring, mind-altering substance and one of the essential neurotransmitters in the brain whose higher levels produce the feeling of euphoria associated with other imbibed mind-altering substances. Addiction to mood-altering substances is thought to occur as a result of decreased GABA (gamma-aminobutyric acid) (Volkow & Fowler, 2000). GABA is a natural calming agent and insufficient levels of GABA can cause symptoms of anxiety, insomnia, epilepsy and other brain disorders.

The short term use of mind-altering chemicals can cause temporary deregulation of the neurotransmitters in the brain and are expressed by some unique and usually temporary behaviors. Long term use can cause permanent changes in the neuroregulatory system in the
brain with resultant negative behaviors. The neuroregulatory changes that occur in drug addicts and alcoholics serve to reset their brain reward systems outside of normal societal limits. This leads to a loss of control over the use of mind-altering substances despite negative consequences (Koob and LeMoal, 2008).

Busy nurses entrusted with patient care on 24 hrs period, if addicted, would not only be a danger to their colleagues but would also be a danger to patients by high probability of giving wrong treatment to the right patient or wrong drugs to the wrong patients. What happens when those who care for you have trouble in caring for themselves? A story by Kizito Lubano, where he noticed medical staff members with erratic unprofessional behaviors, upon confrontation they claimed to be in severe personal and family stress. But patients have complained of these rude and abrupt mannerisms and often they do not turn up for scheduled patients’ appointments; ‘should I report him?’, a colleague wondered aloud. A nurse admits to drinking at work while another admits stealing drugs from the hospital, is this happening in our present day practice? Sometimes, one has to invoke their ethical responsibility and report a colleague for the sake of public safety.

Nurses with a substance use disorder can also display suspicious behaviors, this include, incorrect narcotic counts; they may consistently volunteer to administer medications, wait to be alone to open a narcotic cabinet and may lack witnesses to verify the wasting of unused medications. Nurses with untreated addiction can jeopardize patient safety because of impaired judgment, slower reaction time, diverting prescribed drugs from patients for their own use, neglect of patients and making a variety of other errors (Dunn, 2005).

Following continued use, complications occur, which can be classified as follows: Work Related Complications to include lateness to appointments, increased absences or unknown whereabouts, unusual rounding times: either very early or very late, increased patient complains, increased secrecy, decrease in quality of care, careless medical decisions, decrease in quality of care, careless medical decisions, incorrect charting or writing of prescriptions, decrease in quality of productivity and efficiency, increased conflicts with colleagues, increased irritability and aggression, smell of alcohol; intoxication, needle marks and erratic job history (Ross, 2003).
Problems at home to include withdrawal from family friends and relatives, legal troubles such as, drunk driving, increased accidents, increased medical problems and doctor’s visits, increased aggression, agitation and overt conflict, financial difficulties, deterioration of personal hygiene, emotional disturbances such as depression, anxiety and mood instability.

Medical complications include nervous system depression, decreased efficiency of the heart and pancreas, gastric ulcers, liver cirrhosis and decreased immunity, dementia, Wernicke’s Syndrome, polynyuritis, hepatitis and liver failure. Other psychological complications include anxiety, depression, organic mental disorders and delirium tremens withdrawal seizures. Pregnancy complications which are: fetal alcohol syndrome, central nervous system abnormalities, abortion, miscarriage and low birth weight (Ross, 2003).

2.6 Measures taken to Manage Opioid Abuse by Nurses
Objective five set out to explore measures taken to manage nurses who abuse opioids. It emerges that administrative benign neglect is a term used to describe the health care administrators who fail to recognize or intervene with nurse employees who have an active substance use disorder (Gossop et al., 2001). If there is an early failure to act responsibly, the disease may progress to the point where it is too late for the administration to justify retaining the nurse.

Firing someone may become the only alternative for far too many nurses. Nurses who suspect a substance use disorder in co-workers need to be provided with guidelines and a clear process for reporting their concerns in a discreet and non-threatening manner (Tirrell, 1994). This will increase the likelihood that substance use problems are detected earlier and dealt with appropriately.

If nurses do not have a clear process for acting on concerns about a colleague they may attempt to cover up for the person instead, which can contribute to the danger for the affected nurse as well as for patients (Serghis, 1999). Data also indicate that the likelihood of successful treatment outcomes is higher when treatment is implemented earlier in the addiction process (Martin, Schaffer & Campbell, 1999). Giving a staff the proper information for reporting and rehabilitation can also lead to other benefits. Torkelson, Anderson & McDaniel, (1996) found that organizations where the problem of nurses with a substance use disorder were not perceived as threatening, promoted a culture of openness, participation and professionalism. In addition,
such organizations were more likely to refer, re-integrate and hire recovering nurses with a substance use disorder. Prompt recognition and reporting also minimizes the danger impaired nursing practice can pose to patients and co-workers (Shewey, 1997).

2.6.1 Medication Management in the Treatment of Opioids use Disorder
Medication management is very important in the administration of detoxification and treatment as part of the treatment of a substance use disorder and yet it remains controversial when used in recovery maintenance for abstinence – based monitoring programs. The Centre for Substance Abuse Treatment (CSAT) consensus panel recommends that medication – assisted treatment for opioids addiction, as provided in opioids treatment programs (OTPs) be conceptualized as phases of treatment so that interventions are matched to the levels of patient progress and intended outcomes (Batki, Kauffman, Marion, Parrino & Woody, 2005).

It is when patients are discharged from treatment and aftercare and then enter into a stable recovery that the question arises about medications such as buprenorphine and methadone. The controversy over the use of these medications involves the mind – altering effects that may accompany their use, including their longer term use for maintenance therapy. Currently, the use of naltrexone as maintenance therapy is encouraged when morphine, oxycodone, oxymorphone, fentanyl and other opioids have been abused. The American Association of Nurse Anesthetists encourages the use of a third party to administer naltrexone on a daily basis to ensure consistent dosing (Hudson, 1998). However, pharmacological treatment of addiction works best when used in conjunction with extended behavioral interventions (NIDA, 2009).

2.7 Summary of Knowledge Gaps in the Literature
The knowledge gaps in the study can be reviewed under different themes, which include provider-based, opioid substitutes, regulatory bodies, pharmaceutical industries and patient focused factors. There are factors under each of them which are deficient in knowledge and which are likely to reduce or increase use of opioids. Providers’ gaps likely to increase abuse include lack of physicians’ and nurse education on opioids use and pain management. For instance, there is lack of standardization in prescribing practices, medication errors and oversight mistakes, and ineffective prescription monitoring at the pharmacy and ward levels. Improvements in physician education about opioids and pain treatments, standardization of
prescribing practices and increased surveillance on prescription monitoring programmes would help reduce abuse of opioids.

Secondly, opioid substitution therapies should not be restricted, availability of pain management therapies and opioid sparing drugs as alternative treatments would also aid in opioid abuse reduction. Thirdly, regulation of substitution therapy prescriptions, increased pain management standards with liberalization of prescription opioids can be detrimental to opioids abuse unlike when there is implementation of regulatory programmes and prescription drug monitoring programmes coupled by multidimensional post-operative pain scales and standardized treatment protocols.

Availability of opioids and opium derivatives such as drugs containing codeine from pharmaceutical industries and promotion of marketing by some companies can promote abuse unlike when there is government restriction by implementation of enacted laws on procurement and dispensing through pharmacy and poisons board. The fear by prescribers for under-treatment of pain promotes use of opioids. This is further enhanced by lack of knowledge by the patients in addition to restriction in the use of substitution therapies by insurance companies. The counter effect can be achieved through standardization of prescribing practices following pain scales and patient education.

**Work place tension and abuse are significant contributing factors to nurses’ abuse of opioids.** Such abuse may take many forms ranging from inappropriate interpersonal communication to sexual harassment, raising awareness and holding individuals accountable for their work behaviour can lead to a safer and more harmonious work environment.
CHAPTER THREE
METHODOLOGY

3.1 Introduction
In this chapter, the researcher discussed the research design, variables, location of the study, study population, inclusion and exclusion, sample size determination, sampling technique, construction and research instruments, data collection techniques, data analysis, logistical and ethical considerations.

3.2 Study Area
The location of this study was at Kenyatta National Hospital (KNH). It is the largest national referral, teaching and research hospital in Kenya, and participates in national health planning and policy. KNH is at the apex of the referral system in the health sector and plays critical role in terms of health delivery. It is located in the Nairobi County along Hospital Road, upper hill, about 5 kilometers west of Central Business District. It has a bed capacity of over 1,800, attends to 80,000 inpatients and over 500,000 outpatients annually. It has over 6,000 employees including 1,664 nurses. The nurse patient ratio varies per department and per shift, with the worst scenario being a ratio of 1:40 (KNH Health Information Department, 2015).

3.3 Study Population
The study population comprised nurses working in KNH who met the inclusion criteria, which were all those nurses who consented and who were working at KNH during the period of study. There were 1,664 (35.9%) nurses in the hospital (Health information Department, 2015). Female nurses were 1,374 (82.6%) while males were 290 (17.4%). Female nurses dominated the profession. However, during analysis few questionnaires were found about 2.6% and 1.7% of respondents who were on contract and casual terms. However, 92.7% of respondents were permanent employees.

3.4 Research Design
This study adopted a cross sectional survey design. This was found suitable as it implies the process of gaining insight into the general picture of a situation without utilizing the entire population (Gall, Borg, and Gall .1996). This design was useful in this study because it captures
information on data at a specific point in time and helps to remove assumptions by proving or validating research findings of variables studied at a specific time period.

3.4.1 Sample Size Determination

The sample size was calculated using the formula by (Fisher et al, 1998). There was no estimate of the proportion in the population assumed to have the characteristics of interest, thus p was set at 50%.

\[ N = \frac{Z^2PQ}{d^2} \]

Where

- \( Z \) = is the standard normal deviate at 95% CI (\( Z \)- Value = 1.96)
- \( P \) = proportion of the population with characteristics under investigation
- \( Q \) = is the proportion without characteristics under investigation
- \( d \) = is the degree of accuracy (p- value = 0.05)

\[ n = \frac{(1.96)^2 (0.50) (0.50)}{(0.05)^2} \]

\( n = 384 \)

The total population was 1664 <10,000. The formula to determine the sample size was therefore adjusted as follows:

Therefore, \( nf = n \frac{n}{1 + \left(\frac{n}{N}\right)} \)

Where \( nf = n \frac{384}{1 + (384/1664)} \)

\( nf = 384 \frac{384}{1 + 0.231} \)

\( nf = \frac{384}{1 + 0.231} = 312 \) with additional 31(10%).

\( nf = 343. \) When the population is less than 10,000 recommended by (Mugenda & Mugenda, 2003)

3.4.2 Sampling Technique

Simple random sampling was used to select the participants that were involved in the study. Proportionate sampling was employed in order to get representatives in each department.
Multi stage sampling technique was used to get the distribution of 312 study participants. The first stage involved determining the distribution of the participants based on departments of deployment and gender within Kenyatta National Hospital. This was obtained from the Human Resource Department. The population distribution is as shown in Table 3.1.

**Table 3.1: Distribution of nurses’ population in KNH (Sampling frame)**

<table>
<thead>
<tr>
<th>Department</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accident and Emergency</td>
<td>22 (1.3%)</td>
<td>81 (4.9%)</td>
<td>103 (6.2%)</td>
</tr>
<tr>
<td>Main Theatres</td>
<td>41 (2.5%)</td>
<td>78 (4.7%)</td>
<td>119 (7.2%)</td>
</tr>
<tr>
<td>Medical Services</td>
<td>57 (3.4%)</td>
<td>234 (14.1%)</td>
<td>291 (17.5%)</td>
</tr>
<tr>
<td>Paediatrics</td>
<td>24 (1.4%)</td>
<td>230 (13.8%)</td>
<td>254 (15.3%)</td>
</tr>
<tr>
<td>Private Wing</td>
<td>26 (1.6%)</td>
<td>146 (8.8%)</td>
<td>172 (10.3%)</td>
</tr>
<tr>
<td>Reproductive Health</td>
<td>26 (1.6%)</td>
<td>173 (10.4%)</td>
<td>199 (12.0%)</td>
</tr>
<tr>
<td>Surgical Services</td>
<td>94 (5.6%)</td>
<td>432 (26.0%)</td>
<td>526 (31.6%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>290 (17.4%)</strong></td>
<td><strong>1374 (82.6%)</strong></td>
<td><strong>1664 (100%)</strong></td>
</tr>
</tbody>
</table>

The second stage involved selection of participants from each department as shown in Table 3.2.

**Table 3.2: Distribution of the sample**

<table>
<thead>
<tr>
<th>Department</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accident and Emergency</td>
<td>4 (1.3%)</td>
<td>15 (4.9%)</td>
<td>19 (6.2%)</td>
</tr>
<tr>
<td>Main Theatres</td>
<td>7 (2.4%)</td>
<td>15 (4.7%)</td>
<td>22 (7.1%)</td>
</tr>
<tr>
<td>Medical Services</td>
<td>11 (3.4%)</td>
<td>44 (14.1%)</td>
<td>55 (17.5%)</td>
</tr>
<tr>
<td>Paediatrics</td>
<td>4 (1.4%)</td>
<td>44 (13.8%)</td>
<td>48 (15.3%)</td>
</tr>
<tr>
<td>Private Wing</td>
<td>5 (1.6%)</td>
<td>27 (8.8%)</td>
<td>32 (10.3%)</td>
</tr>
<tr>
<td>Reproductive Health</td>
<td>5 (1.6%)</td>
<td>32 (10.4%)</td>
<td>37 (12.0%)</td>
</tr>
<tr>
<td>Surgical Services</td>
<td>18 (5.6%)</td>
<td>81 (26.0%)</td>
<td>99 (31.6%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>54 (17.3%)</strong></td>
<td><strong>258 (82.7%)</strong></td>
<td><strong>312 (100%)</strong></td>
</tr>
</tbody>
</table>

The third stage involved selection of additional 10% of participants which was done in the same way as the study sample to cater for non responses as shown in Table 3.3.
Table 3.3: Distribution of additional 10%

<table>
<thead>
<tr>
<th>Department</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accident and Emergency</td>
<td>0 (0.0%)</td>
<td>2 (6.5%)</td>
<td>2 (6.5%)</td>
</tr>
<tr>
<td>Main Theatres</td>
<td>1 (3.2%)</td>
<td>2 (6.5%)</td>
<td>3 (9.7%)</td>
</tr>
<tr>
<td>Medical Services</td>
<td>1 (3.2%)</td>
<td>4 (12.9%)</td>
<td>5 (16.1%)</td>
</tr>
<tr>
<td>Paediatrics</td>
<td>0 (0.0%)</td>
<td>4 (12.9%)</td>
<td>4 (12.9%)</td>
</tr>
<tr>
<td>Private Wing</td>
<td>1 (3.2%)</td>
<td>3 (9.7%)</td>
<td>4 (12.9%)</td>
</tr>
<tr>
<td>Reproductive Health</td>
<td>1 (3.2%)</td>
<td>3 (9.7%)</td>
<td>4 (12.9%)</td>
</tr>
<tr>
<td>Surgical Services</td>
<td>1 (3.2%)</td>
<td>8 (25.8%)</td>
<td>9 (29.0%)</td>
</tr>
<tr>
<td>Total</td>
<td>5 (16.1%)</td>
<td>26 (83.9%)</td>
<td>31 (100%)</td>
</tr>
</tbody>
</table>

3.4.3 Variables
The dependent variable in this study was opioid abuse while the independent variable consisted of demographic characteristics namely gender, age and the level of education, highest qualification and working experience.

3.5 Research Instruments
Self-administered questionnaires were distributed to participants, and study participants were asked to answer all questions. The whole process utilized 4 research assistants that were trained and closely supervised by the researcher. Three research assistants were qualified university graduates in the area of public health while one was trained in biomedical sciences. Filled questionnaires were collected daily from the field. The researcher also ensured that no participant was asked to participate in the study more than once by coding all the questionnaires and allocating each participant a unique code to match his or her questionnaire.

3.5.1 Semi Structured Questionnaire
The questionnaire had two parts as shown in Appendix II. The first part included socio-demographic characteristics. Participants responded by ticking the appropriate answer in the boxes provided. The second part contained objective based questions. Logical sequence of items starting with most important was done and the length of questionnaire reduced to avoid contamination of data by either over reporting or under reporting. ASSIST a data collection tool adopted from WHO was modified and added to help in data collection.
3.5.2 Data Collection Techniques
Data was collected using coded anonymous standard self-administered questionnaire. To avoid sharing of information questionnaires were distributed to each department per single day and collected within the same day for 5 days.

3.5.3 Inclusion Criteria
All nurses dealing with direct patient care, who consented to participate, were included in the study. Departmental in charge and administrators were approached for permissions and were served with copies of the research permits. However, they were not part of the study sample and were not interviewed. Their role was to provide data. The interaction with them was limited to obtaining institutional policy guidelines.

3.5.4 Exclusion Criteria
All nurses who did not consent to participate in the study were excluded. All nurses working in the clinics were also excluded because they had participated in the pretest study.

3.5.5 Validity and Reliability
In order to test validity and reliability of the data collected a pre-test was done before the actual study whereby some nurses with characteristics similar to the study participants were interviewed. The pretest study was carried out Kenyatta National hospital satellite clinics, which are located independently away from main hospital. This was because it was difficult to get approval in another hospital due to sensitivity of the topic. A sample of 34 nurses were interviewed to make 10% of total sample projected (Connelly2008). After the pretest, the data collection tool was cleaned by removal of ambiguous items and retained only those that attracted appropriate responses.

3.6 Data Analysis and Presentation
The responses were coded and assigned numerical values according to data type. The data was then analyzed quantitatively using SPSS version 18. The results were summarized and presented in frequency tables and as proportions. Categorical data was also analyzed and displayed in frequencies and proportions.
3.7 Ethical Considerations

Initial clearance to proceed to the field was given by Maseno University’s School of Graduate Studies. Subsequently, permission was sought from KNH/UON research committee (Appendix V). An informed consent (Appendix I) was obtained from participants. Confidentiality and anonymity was maintained by using codes instead of participants’ names. Participants were under no obligation to answer the questions they were not comfortable with. There were no risks involved nor were there any monetary gains for the participants.
CHAPTER FOUR

RESULTS

4.1 Introduction
This chapter presents the results of the study analyzed and presented as per the questionnaire. A total of 344 respondents out of a sample size of 343 participated in the study. The response rate was therefore 100%. The study was conducted between December 2017 and February 2018. All the filled questionnaires were analyzed using descriptive statistics in SPSS version 23.0

4.2 Socio-demographic Information
4.2.1 Socio-demographic Profile of the Study Participants
As illustrated in Table 4.1 below, majority 76.2% (n=262) were female while 23.8% (n=82) were males. Majority of them 37.5% (n=129) had working experience of less than 5 years, followed by 21.8% (n=75) who had a work experience between 6-10 years. More than half 52.3% (n=180) were married, 42.4% (n=146) of them were single. Almost all 92.7% (n=319) were permanently employed and were pensionable, however, 1.7% (n=6) were on contract basis. Professionally, Majority 63.7% (n=219) had diploma in nursing as their highest level of professional qualification, followed by 31.4% (n=108) who had degree.
Table 4.1: Socio-Demographic Characteristics (n=344)

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency n (%)</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>82 (23.8)</td>
<td>344</td>
</tr>
<tr>
<td>Female</td>
<td>262 (76.2)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Years of working experience</th>
<th>Frequency n (%)</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 5 years</td>
<td>129 (37.5)</td>
<td>283</td>
</tr>
<tr>
<td>6 – 10 years</td>
<td>75 (21.8)</td>
<td></td>
</tr>
<tr>
<td>11 – 15 years</td>
<td>27 (7.8)</td>
<td></td>
</tr>
<tr>
<td>16 – 20 years</td>
<td>27 (7.8)</td>
<td></td>
</tr>
<tr>
<td>More than 20 years</td>
<td>25 (7.3)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Frequency n (%)</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>146 (42.4)</td>
<td>343</td>
</tr>
<tr>
<td>Married</td>
<td>180 (52.3)</td>
<td></td>
</tr>
<tr>
<td>Separated</td>
<td>13 (3.8)</td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>3 (0.9)</td>
<td></td>
</tr>
<tr>
<td>Widowed</td>
<td>1 (0.3)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employment Status</th>
<th>Frequency n (%)</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent</td>
<td>319 (92.7)</td>
<td>334</td>
</tr>
<tr>
<td>Contract</td>
<td>9 (2.6)</td>
<td></td>
</tr>
<tr>
<td>Casual</td>
<td>6 (1.7)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Academic Qualifications</th>
<th>Frequency n (%)</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate</td>
<td>11 (3.2)</td>
<td>342</td>
</tr>
<tr>
<td>Diploma</td>
<td>219 (63.7)</td>
<td></td>
</tr>
<tr>
<td>Degree</td>
<td>108 (31.4)</td>
<td></td>
</tr>
<tr>
<td>Masters</td>
<td>3 (0.9)</td>
<td></td>
</tr>
<tr>
<td>PhD – Doctorate</td>
<td>1 (0.3)</td>
<td></td>
</tr>
</tbody>
</table>

4.3 Prevalence of Opioid Abuse among Nurses at Kenyatta National Hospital

Objective one had set out to determine the prevalence of opioid abuse among nurses working at Kenyatta National Hospital. Respondents were therefore asked to indicate the frequency of using the drugs in the past three months. The results were as illustrated below.

4.3.1 Substances Ever used by the Respondents

Alcoholic beverages were the most used by more than half of the respondents 52.3% (n=173), this was followed by sedatives or sleeping pills 17.1% (n=52). Table 5 below illustrates these findings.
Table 4.2: Substances ever used by the respondents (n=344)

<table>
<thead>
<tr>
<th>Substances ever used by the respondents</th>
<th>Frequency n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Tobacco Products (Cigarettes, Chewing Tobacco, Cigars etc.)</td>
<td>35(11.3)</td>
</tr>
<tr>
<td>Alcoholic Beverages (Beer, Wines, Spirits etc.)</td>
<td>173(52.3)</td>
</tr>
<tr>
<td>Cannabis (Marijuana, Pot, Grass, Hash etc.)</td>
<td>31(10.0)</td>
</tr>
<tr>
<td>Cocaine (Coke, Crack etc.)</td>
<td>23(7.7)</td>
</tr>
<tr>
<td>Amphetamines type Stimulant (Speed, Diet Pills, and Ecstasy etc.)</td>
<td>13(4.3)</td>
</tr>
<tr>
<td>Inhalants (Nitrous, Glue, Petrol, Thinner etc.)</td>
<td>7(2.3)</td>
</tr>
<tr>
<td>Sedatives or Sleeping Pills (Valium, Serepax, Dormicum, etc.)</td>
<td>52(17.1)</td>
</tr>
<tr>
<td>Hallucinogens (LSD Acid, etc.)</td>
<td>6(2.1)</td>
</tr>
<tr>
<td>Opioids addiction (Heroin, Codeine, Pethidine, Morphine, Tramal etc.)</td>
<td>42(14.0)</td>
</tr>
</tbody>
</table>

Table 4.3: Frequency of using the drugs in the past three months (n=344)

<table>
<thead>
<tr>
<th>In the past three (3) months, how often have you used the substances you mentioned</th>
<th>Frequency n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
</tr>
<tr>
<td></td>
<td>181 (55.4)</td>
</tr>
<tr>
<td>During the past 3 months, how often have you had a strong desire or urge to use the drugs?</td>
<td>245 (76.6)</td>
</tr>
<tr>
<td>During the past three months, how often has your use of mentioned drug led to health, social legal or financial problems?</td>
<td>270 (87.1)</td>
</tr>
<tr>
<td>During the past 3 months, how often have you failed to do what is normally expected because of using the above drugs?</td>
<td>278 (90.3)</td>
</tr>
</tbody>
</table>
4.3.2 Frequency of using the Drugs in the Past Three Months

Majority 55.4% (n=181) had never used substances in the past three months before the study period, however, 27.8% (n=91) had used them either once or twice within the past three months of the study period.

In terms of strong desire to use the drugs in the past three months, majority 46.6% (n=245) had never used, while 14.4% (n=46) had either had a strong desire to use them once or twice within the stated period. Similarly, 90.3% (n=278%) reported that they had never failed to do what was normally expected of them because of using the drugs.

4.3.3 Extent of Drug Use

The respondents were asked to state their extent of drugs use. Majority 78.5% (n=238) reported that no friends, relatives or any one had ever expressed concern about their use of drugs, however 16.5% (n=50) reported concern by the relatives in the past three months. Similarly, 84.1% (n=253) indicated that they had never tried and failed to control, cut down or stop using the mentioned drugs, with majority 92.0 (n=277) reported that they had never used any drugs by injection. Table 4.4 illustrates these findings.

Table 4.4: Extent of drug use (n=344)

<table>
<thead>
<tr>
<th></th>
<th>Frequency n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Never</td>
</tr>
<tr>
<td>Has a friend, relative or anyone else ever expressed concern about your use of drugs?</td>
<td>238 (78.5)</td>
</tr>
<tr>
<td>Have you ever tried and failed to control, cut down or stop using the mentioned drugs?</td>
<td>253 (84.1)</td>
</tr>
<tr>
<td>Have you ever used any drug by injection?</td>
<td>277 (92.0)</td>
</tr>
</tbody>
</table>

The above results therefore indicate that awareness was law among relatives of potential opioid abusers hence low chance of intervention and social support. This means that abusers were bound to suffer in silence as majority of friends and relatives were either less concerned about possibility of opioid abuse or they least expected medics to abuse prescribed clinical drugs. Moreover, there was a significant number that had tried to control the use if drugs in the past three months but failed. This points to possibility of addiction and lack of personal remedy to the
problem. Finally, a significant number had also used an injectable drug which means that they were prone to repeat the act to avoid the effects of withdrawal syndrome.

4.4 Factors Contributing to Substance Abuse Among Nurses at Kenyatta National Hospital

Objective two set out to investigate the factors contributing to substance abuse among nurses at Kenyatta National Hospital and the results were as follows.

Table 4.5: Factors contributing to substance abuse among nurses at KNH

<table>
<thead>
<tr>
<th>Contribution</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low self esteem</td>
<td>132</td>
<td>38.4</td>
</tr>
<tr>
<td>Coping with stressful hospital</td>
<td>148</td>
<td>43.0</td>
</tr>
<tr>
<td>conditions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family problems</td>
<td>159</td>
<td>46.2</td>
</tr>
<tr>
<td>Depression</td>
<td>141</td>
<td>41.0</td>
</tr>
<tr>
<td>Desperation</td>
<td>75</td>
<td>21.8</td>
</tr>
<tr>
<td>Peer pressure</td>
<td>160</td>
<td>46.5</td>
</tr>
<tr>
<td>Availability of substance</td>
<td>150</td>
<td>43.6</td>
</tr>
<tr>
<td>Overworking</td>
<td>90</td>
<td>26.2</td>
</tr>
<tr>
<td>Poor working relationships</td>
<td>76</td>
<td>22.1</td>
</tr>
<tr>
<td>Chronic illness</td>
<td>78</td>
<td>22.7</td>
</tr>
<tr>
<td>Lack of sleep</td>
<td>94</td>
<td>27.3</td>
</tr>
<tr>
<td>All the above</td>
<td>20</td>
<td>5.8</td>
</tr>
</tbody>
</table>

Table 4.5 reveals that the leading factors causing opioid abuse are family problems (46.2%) and peer pressure (46.2%). These are closely followed by availability of the substance (43.6%), coping with stressful conditions (43%) and depression (41%). Other significant causes are low self-esteem (38.4%) and lack of sleep (27.3%) and overworking (26.2%). These factors are interrelated because family problems can lead to stress and depression while overworking can cause lack of sleep. Similarly, depression can cause lack of sleep while family problems and desperation can cause low self-esteem. This implies that solving one of the factors may not eradicate abuse entirely while ignoring one of the factors can trigger further abuse.
One significant factor worth attention is the availability of substance. This implies that easy access to drugs encourages abuse because the nurses obtain the opioids for free since they are the custodians. This could also lead to underdoing the patients to spare some drugs for personal use/abuse. Some correspondents also reported chronic illness as a factor for opioid use which means that even nurses need mentoring because they could abuse opioids if they are allowed to self-medicate. Social factors such as poor working relationships and desperation are also related. Peer pressure stood out as a leading social cause of abuse of opioids. This means that nurses formed social networks and there was a trend of sharing their problems and work related issues which could influence them to adopt opioid abuse in order to conform to the practice by their colleagues.

4.4.1 Provision of Direct Care to Patients
The respondents were asked whether they were providing direct care to the patients, majority 97.7% (n=336) responded affirmatively, with only 2.3% (n=8) who responded on the contrary. Figure 4.1 illustrates these findings.

Figure 4.1: Proportion of respondents providing direct care to patients (n=344)
**4.4.2 Proportion of Respondents Admitted to KNH due to Sickness**

The respondents were asked whether they had ever been admitted in KNH due to sickness, majority 84.3% (n=290) indicated that they had never been admitted before. Figure 4.2 below illustrates these findings.

![Proportion of respondents admitted to KNH due to sickness (n=344)](image)

**Figure 4.2: Proportion of respondents admitted to KNH due to sickness (n=344)**

**4.5 Medical Opioids Abused by the Respondents**

Objective three set out to determine the major medical opioid commonly abused by nurses at Kenyatta National Hospital. The results were as follows.

**4.5.1 Number of Respondents’ Colleagues Abusing Drugs**

The respondents were asked to state the number of colleagues, who were abusing specific drugs, pethidine was the most used drug. Approximately 17.2% (n=59) of the respondents indicated that one of their colleagues was using it, followed by 11.6% (n=40) who reported that 2 of their colleagues was using pethidine. Morphine, Tramal, dormicum and alcohol were also other drugs that were commonly abused as was reported by the respondents. The table below illustrates these findings.
Table 4.6: Number of respondents’ colleagues abusing drugs (n=344)

<table>
<thead>
<tr>
<th>Frequency n (%)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>≥5</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pethidine</td>
<td>59 (17.2)</td>
<td>40 (11.6)</td>
<td>8 (2.3)</td>
<td>3 (0.9)</td>
<td>3 (0.9)</td>
<td>231 (67.2)</td>
</tr>
<tr>
<td>Morphine</td>
<td>31 (9.0)</td>
<td>15 (4.4)</td>
<td>6 (1.7)</td>
<td>1 (0.3)</td>
<td>5 (1.5)</td>
<td>286 (83.1)</td>
</tr>
<tr>
<td>Tramal</td>
<td>19 (5.5)</td>
<td>10 (2.9)</td>
<td>10 (2.9)</td>
<td>5 (1.5)</td>
<td>1 (0.3)</td>
<td>299 (86.9)</td>
</tr>
<tr>
<td>Dormicum</td>
<td>20 (5.8)</td>
<td>8 (2.3)</td>
<td>5 (1.5)</td>
<td>3 (0.9)</td>
<td>0 (0.0)</td>
<td>308 (89.5)</td>
</tr>
<tr>
<td>Alcohol</td>
<td>5 (1.5)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>339 (98.5)</td>
</tr>
<tr>
<td>Diazepam</td>
<td>3 (0.8)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>341 (99.2)</td>
</tr>
<tr>
<td>Halothane</td>
<td>1 (0.3)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>343 (99.7)</td>
</tr>
<tr>
<td>Miraa/Khat</td>
<td>1 (0.3)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>343 (99.7)</td>
</tr>
</tbody>
</table>

4.5.2 Distribution of Opioid addiction Rates between Males and Females

According to table below, Majority of males 68.5 % (n=50) were addicted to Pethidine compared to 31.5% (n=23) of their female counterparts. Similarly, the rate of addiction to Dormicum was high in males 77.8% (n=14) compared to females 22.2% (n=4). However, the rate of addiction to Tramal was high in females 80.0% (n=16) compared to males 20.0% (n=4).

Table 4.7: Distribution of opioid addiction rates between males and females

<table>
<thead>
<tr>
<th>Frequency n (%)</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pethidine</td>
<td>50 (68.5)</td>
<td>23 (31.5)</td>
<td>73 (100.0)</td>
</tr>
<tr>
<td>Morphine</td>
<td>11 (50.0)</td>
<td>11 (50.0)</td>
<td>22 (100.0)</td>
</tr>
<tr>
<td>Tramal</td>
<td>4 (20.0)</td>
<td>16 (80.0)</td>
<td>20 (100.0)</td>
</tr>
<tr>
<td>Dormicum</td>
<td>14 (77.8)</td>
<td>4 (22.2)</td>
<td>18 (100.0)</td>
</tr>
<tr>
<td>Alcohol</td>
<td>4 (80.0)</td>
<td>1 (20.0)</td>
<td>5 (100.0)</td>
</tr>
<tr>
<td>Diazepam</td>
<td>1 (25.0)</td>
<td>3 (75.0)</td>
<td>4 (100.0)</td>
</tr>
<tr>
<td>Halothane</td>
<td>0 (0.0)</td>
<td>1 (100.0)</td>
<td>1 (100.0)</td>
</tr>
</tbody>
</table>
Figure 4.3: Distribution of addiction rates between males and females

4.6 Workplace Behaviour of Respondents Abusing Substances

Objective four set out to establish the workplace behaviour of nurses who abuse opioids at Kenyatta National Hospital. The results were as follows:

4.6.1 How the Controlled Substances Abusers were Discovered

According to the table majority 28.2% (n=128) were discovered through behavioral changes at the work place, followed by 25.3% (n=115) of them who were discovered through work related problems as shown in Table 4.7.

Table 4.8: How the controlled substances abusers were discovered (n=344)

<table>
<thead>
<tr>
<th>Responses</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voluntary Admission</td>
<td>54</td>
<td>11.9</td>
</tr>
<tr>
<td>Witnessed Admission</td>
<td>49</td>
<td>10.8</td>
</tr>
<tr>
<td>Behavioral Changes</td>
<td>128</td>
<td>28.2</td>
</tr>
<tr>
<td>Work Related Problems</td>
<td>115</td>
<td>25.3</td>
</tr>
<tr>
<td>Family Related Problems</td>
<td>62</td>
<td>13.7</td>
</tr>
<tr>
<td>Sickness or Death</td>
<td>46</td>
<td>10.1</td>
</tr>
</tbody>
</table>
4.6.2 What happened to the Victim following Discovery

Majority 25.3% (n=98) were still working in the hospital following discovery, however, 19.3% (n=75) were treated and rehabilitated, 11.1% (n=43) were still undergoing treatment during the time of the study while 12.4% (n=48) had returned to work after rehabilitation. Figure 4.4 below illustrates these findings.

![Bar chart showing outcomes](chart.png)

**Figure 4.4: What happened to this person following discovery (n=344)**

4.6.3 Problems Associated with Substance Abuse

According to the respondents, problems associated with individuals who were abusing the substances were lateness to work 60.4% (n=208), increased complaints received from their colleagues 43.9% (n=151) with similar proportion having increased mistakes at the work place. Others were increased number of reported patients complaints, and financial difficulties among the victims. Figure 4.5 below illustrates these findings.
4.6.4 Existence of Policy in the Department on Drug use

The respondents were asked if there was any existing policy in the organization on drug use, majority 57.0% (n=172) indicated that there was a policy, while 43.0% (n=130) stated otherwise as shown in figure below.

Figure 4.6: Existence of policy in the department on drug use (n=344)
4.6.5 Opinion of Respondents on the Incidence of Abuse of Opioids

Majority 63.3% (n=195) of the respondents stated that the level of opioids abuse was increasing, while 17.2% (n=53) indicated that it was decreasing.

Table 4.9: Opinion on incidences of opioids use among respondents (n=344)

<table>
<thead>
<tr>
<th>Frequency n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increasing</td>
</tr>
<tr>
<td>Decreasing</td>
</tr>
<tr>
<td>Non existent</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

4.6.6 Reasons Contributing to Increasing Incidences of Opioid Abuse

According to the respondents, the main reasons for increased abuse of opioids among the respondents were work related stress 32.2% (n=64), availability of the substance readily 24.9 (n=48).

Table 4.10: Reasons contributing to increasing incidences of opioids abuse (n=344)

<table>
<thead>
<tr>
<th>Reason</th>
<th>Responses</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work related stress</td>
<td></td>
<td>64</td>
<td>33.2%</td>
</tr>
<tr>
<td>Poor pay</td>
<td></td>
<td>5</td>
<td>2.6%</td>
</tr>
<tr>
<td>Peer pressure</td>
<td></td>
<td>13</td>
<td>6.7%</td>
</tr>
<tr>
<td>History of abuse</td>
<td></td>
<td>2</td>
<td>1.0%</td>
</tr>
<tr>
<td>Lifestyle</td>
<td></td>
<td>6</td>
<td>3.1%</td>
</tr>
<tr>
<td>Coping with traumatic event</td>
<td></td>
<td>2</td>
<td>1.0%</td>
</tr>
<tr>
<td>Family problems</td>
<td></td>
<td>12</td>
<td>6.2%</td>
</tr>
<tr>
<td>Poor working condition</td>
<td></td>
<td>15</td>
<td>7.8%</td>
</tr>
<tr>
<td>Availability of substance</td>
<td></td>
<td>48</td>
<td>24.9%</td>
</tr>
<tr>
<td>Low self esteem</td>
<td></td>
<td>5</td>
<td>2.6%</td>
</tr>
<tr>
<td>Poor coping mechanism</td>
<td></td>
<td>4</td>
<td>2.1%</td>
</tr>
<tr>
<td>Lack of legal action</td>
<td></td>
<td>3</td>
<td>1.6%</td>
</tr>
<tr>
<td>Lack of strict measures of accountability</td>
<td></td>
<td>9</td>
<td>4.7%</td>
</tr>
<tr>
<td>Ignorance of consequences</td>
<td></td>
<td>1</td>
<td>0.5%</td>
</tr>
<tr>
<td>Over requisition of drugs</td>
<td></td>
<td>1</td>
<td>0.5%</td>
</tr>
<tr>
<td>Increasing number of complaints</td>
<td></td>
<td>3</td>
<td>1.6%</td>
</tr>
</tbody>
</table>
4.7 Activities Undertaken to Address Drug Abuse

Objective five had set out to explore the measures taken to manage the nurses identified as opioid abusers at Kenyatta National Hospital.

4.7.1 Measures taken to Identify Abuse

4.7.2 Ever been Sensitized on Provisions of Alcohol and Substance Abuse Policy

Majority 66.8% (n=221) stated that they had never been sensitized, while 33.2% (n=110) reported that they had been sensitized.

![Figure 4.7: Proportion sensitized on Provisions of alcohol and substance abuse policy](image)

4.7.3 Availability of Policy Document Copy for Staff

Majority 80.1% (n=88) indicated that the policy documents were not available for reference to all the staffs, while 19.9% (n=22) stated that they were available.
4.7.4 Issues that the Respondents Recommended to be included in the Policy

Respondents were asked on what they would with to be included in the Alcohol and drug abuse policy, so as to effectively address the issues related to substance abuse at work place, majority 58.3% (n=28) indicated increased awareness and sensitization programmes. The findings were as shown in Table 4.10 below.

Table 4.11: Respondents recommendations on issues to be included in the policy

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Frequency n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase awareness and sensitization programmes</td>
<td>28 (58.3)</td>
</tr>
<tr>
<td>Outcomes of prolonged usage</td>
<td>2 (4.2)</td>
</tr>
<tr>
<td>Develop strict policy</td>
<td>8 (16.7)</td>
</tr>
<tr>
<td>Stress management</td>
<td>2 (4.2)</td>
</tr>
<tr>
<td>Rehabilitation policy</td>
<td>8 (16.7)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>48 (100.0)</strong></td>
</tr>
</tbody>
</table>

4.7.5 Proportion of Respondents aware of Activities to Address Drug Abuse

Majority 74.4% (n=242) indicated that they were not aware of activities being undertaken by the organization to address the drug abuse problems among the staffs as shown in the figure below.
The respondents were therefore asked to mention the activities undertaken to address drug abuse among staff. Of the respondents who participated (n=59), majority 45.8% (n=27) indicated that guidance and counseling with rehabilitation of the addicts should be undertaken. This was followed by 35.6% (n=21) respondents who stated that sensitization of drug abuse should be considered.

Table 4.12. Activities Undertaken to Address Drug Abuse (n=59)

<table>
<thead>
<tr>
<th>Activities</th>
<th>Frequency n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guidance and counseling with rehabilitation</td>
<td>27 (45.8)</td>
</tr>
<tr>
<td>Sensitization on drug abuse</td>
<td>21 (35.6)</td>
</tr>
<tr>
<td>Strict supervision and control of Opioids</td>
<td>4 (6.8)</td>
</tr>
<tr>
<td>Team building</td>
<td>3 (5.1)</td>
</tr>
<tr>
<td>Dismissal, disciplinary or suspension</td>
<td>4 (6.8)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>59 (100.0)</strong></td>
</tr>
</tbody>
</table>
Figure 4.10: Activities Undertaken to Address Drug Abuse.
CHAPTER FIVE

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

In this chapter, the researcher discusses the study findings in relation to previously conducted and published studies for similarities or any significant differences. It also presents the study conclusions and recommendations.

5.2 Discussion of Findings

The purpose of this study was to assess the prevalence and contributing factors of opioid abuse among nurses working at Kenyatta National Hospital.

Objective one was to determine the prevalence of opioid abuse among nurses working at Kenyatta National Hospital. On objective one, the study established that prevalence of opioids abuse among nurses at the Kenyatta National Hospital was 14.0% of nurses who self reported to be addicted to opioids. However, more than half of them (52.0%) were addicted to alcoholic beverages. This prevalence was in convergence with Trinkoff, & Storr (1998), who estimated that nurses generally misuse drugs and alcohol at nearly the same rate of (10 to 15 percent) as the rest of the population. Nursing is a highly stressful occupation particularly with staffing shortages; American studies have shown positive relationships between work schedule characteristics such as shift rotation, weekends on, shift lengths longer than eight hours and overtime to substance abuse. In general, the more adverse the schedule was, the greater the likelihood there would be substances abuse (Trinkoff, & Storr, 1998). The work schedule most strongly associated with substances abuse was the combination of shift rotation and longer shifts, which had multiple adverse effects. Shift work and long works hours were shown to lead to fatigues, sleep deprivation, circadian rhythm disruption and other psycho-physiological consequences (Geiger-Brown, & Trinkoff, 2010).

Objective two was meant to investigate factors contributing to substance abuse among nurses working at Kenyatta National Hospital. From our findings, it emerged that these factors included work related stress, availability of opioids, peer pressure and poor working conditions compounded by family problems as the most common factors contributing to opioids abuse.
With peers who are also actively using drugs or in support of continued drug use, addiction becomes an increased risk. Repeated and frequent use contributes to use for purposes of managing normal life issues. The knowledge by nurses that opioids relieve pain and makes patient relax and sleep increases their demand of use for their own pain and discomforts. When in crisis or in need of relief from stress without health coping mechanisms modeled by peers, individuals may be more likely to engage in opioid abuse. Feeling strong and trusting oneself can help someone in recovery and to identify positive new relationships. Too often, recovering nurses report that fear of being left out of a group may have made them feel some level of drug use was obligatory.

The environment in which someone lives or is raised contributes significantly to their perspectives and the choices they make. If one is raised by parents who routinely abuse drugs, then it is likely that one will have a permissive attitude towards drug use. Cultural practices also introduce individuals to drug use, unlike in communities where it is a taboo to take addictive drugs which discourages addiction. Genetic predisposition to the development of addiction may be more powerful when coupled with other aggravating circumstances.

Nurses often work long, rotating and overtime shifts that are physically, mentally and emotionally exhausting. This leaves them with little time to decompress. According to Gonzales 2018, a survey of 2015 of registered nurses in 12 European countries, found that nurses who work 12 hour shifts are more likely to suffer burnout than nurses who work shorter hours. Physical or emotional exhaustion related to fatigue can lead to medical errors, decreased quality of care and poor overall health. As a result, many nurses self medicate with painkillers to relieve a headache or reduce insomnia which can lead to opioid abuse. Nurses experience a range of emotions on job. They often grapple with guilt, despair and anxiety. The demands of this high-stress environment can be taxing.

Objective three was to determine the major medical opioid that is commonly abused by nurses working at Kenyatta National Hospital. In this regard, Amayo, (1994), also affirmed that there various types of substances/drugs that are threatening the survival of man on earth, to include alcohol, tobacco, narcotics: opium, morphine, heroin, codeine, synthetic analgesics and barbiturates, cannabis: charas, bhang, and hashish, hallucinogens: lysergic acid diethylamide phencyclidine and mescaline, inhalants: aerosols, gasoline, petrol sprays, and glues, stimulants
like amphetamines, cocaine, Khat and caffeine beverages like coffee, tea, and cola. This was also evident with the results of this study.

Similarly, our study revealed that less than a quarter of the respondents (17.2%) were aware of at least 1 of their colleagues who had a problem with pethidine. The high pethidine abuse compared to other drugs could have been due to availability of the drug in the hospital. Finding of which were similar to a study by Geiger-Brown, and Trinkoff, 2010) who established that availability of opioids in work place, makes nurses easily accessible to them than any other agent. It was further noted that there were more males (68.5%) colleagues who were abusing opioids compared to their female (31.5%) counterparts which was in agreement with Luck and Hedrick, (2004) who established that males nurses were more likely to abuse opioids due to their inability to control work related stress. However, other opiates that were increasingly being abused were morphine (9.0%) and Tramal (5.5%). further, sedatives were noted to be showing a worrying trends especially dormicum with about 5.8%. The findings were in agreement with those of Amayo, (1994), who found that sedatives and opioids were equally being increasingly abused by healthcare workers due to their euphoric and sedative effects especially as a result of exposure, burnout and work related stress.

Objective four was to establish the workplace behaviour of nurses who abuse opioids at Kenyatta National Hospital. The study found that lateness in reporting to work was the highest mentioned behavior affecting nurses as was stated by 72% of the respondents, this was followed by other top workplace behavior such as complaints from colleagues due to inability to work as required, laziness, increased work place mistakes such as medical errors, financial difficulties and increased family conflicts. The study findings were in agreement with a study by Koob and LeMoal, (2008) who stated that absenteeism, laziness and medical errors were common among nurses abusing drugs. Further the study established that nurses abusing drugs were found to be even more dangerous to their colleagues and patients.

Addicted individuals would not only be a danger to their colleagues but would also be a danger to patients by high probability of giving wrong treatment to the right patient or wrong drugs to the wrong patients. The study findings were also in agreement with a study by Ross, (2003) who established that lateness to work station, increased absence from duty, increased decrease in
quality of care, careless medical decisions, incorrect charting or writing of prescriptions, decrease in quality of productivity and efficiency, increased conflicts with colleagues, increased irritability, aggression, and erratic job history were very common among healthcare workers abusing drugs.

Objective five had set out to explore the measures taken to manage nurses identified with opioid abuse at Kenyatta National Hospital. The study established that, measures taken included guidance and counseling with rehabilitation as the main way of helping them overcome the addictive behaviour. Similarly other methods noted were sensitization of nurses on drug abuse and consequences, as well as developing programs or activities to address drug menace among the staffs. Findings were similar to a study by Gossop et al., (2001), who found that rather than discipline, staffs found to be abusing drugs, should be assisted by the administration.

Guidelines to help staffs report such colleagues and also to self report should be made friendly and un-punitive so that referral to treatment centers for rehabilitation can be enhanced. However, the continuum-of-Care model supports the idea of an ongoing following-up with individual, which starts with an early identification and continues throughout the process of treatment and aftercare (Deitch, Koutsenok & Marsolais, 2005). This model recognizes that different individuals may need different levels of intervention and treatment at different times during the process of their recovery efforts. Treatment for a substance use disorder may be even be more effective if it moves away from an acute care model of treatment and goes toward the chronic care model of treatment that is offered with other chronic relapsing diseases (White, Boyle, & Loveland, 2003).

5.3 Conclusions
Based on the study findings and discussion of the results above, the following were conclusions were drawn.

The conclusion on objective one is that the incidence of opioids abuse among nurses at Kenyatta National Hospital was at 14.0%, however, it was found to be on the increase. The public service abuse work place in Kenya emphasizes that employers should: ensure the environment does not enhance use of alcohol, drug or chemical substances, discourage development of a culture that
facilitates drug abuse, provide guidelines on identification of employees with addiction problems, this if followed will assist in lowering incidence and prevalence.

On objective two, this study concludes that the main causes of opioids / substance abuse were work related stress, availability of opioids, peer pressure and poor working conditions compounded by family problems to be most common factors contributing to opioids abuse among nurses at the hospital.

On objective three, this study concludes Pethidine was the most commonly abused substance, those sedatives such as morphine, dormicum, and tramal abuse were also on the increase.

The conclusion on objective four is that drug abusers were also noted to be reporting to work late and had increased conflicts and complaints from colleagues; they made more mistakes in their responsibilities, had financial difficulties, and were also experiencing regular family conflicts. Staffs that self report should be dealt with positive consideration and non punitive measures of rehabilitating them started. Preferably they should be sent for addiction counseling courses, so that they can be peer mentors.

The conclusion on objective five is that there was poor sensitization on drug abuse by the organization and lack of a well-managed and professionally run guidance and counseling with an effective rehabilitation programme. The public service abuse work place in Kenya emphasizes that organizations should: assist rehabilitated workers and avoid exposing them to working conditions that would enhance relapse, ensure addictive drugs are not sold or advertised, provide employees with information on drug addiction and should not victimize rehabilitated workers or discriminate against them. Public servants however are required to satisfactorily meet employer’s expectations and standards.

5.4 Recommendations
(i) The study recommends that there should be strict control in the use of the most highly abused opioids such as Pethidine and Morphine as controlled substances, and this should go in tandem with stringent audit policy. The hospital should also explore other alternatives to pain management by use of non addictive pain relievers which are therapeutically potent.
ii) The study further recommends that measures such as creation of guidance and counseling with rehabilitation, and sensitization programs on drug abuse by the organization will go a long way in addressing drug abuse among staff. Burnout out issues should be addressed by increasing nurse to patient ratios and also frequent reshuffles from emotionally straining departments to those that are less strenuous. Team building should be funded and encouraged where staff should be taken for entertainment and sporting events.

iii) Debriefing and reflective learning should also be facilitated to help those undergoing introspective trauma to share their feelings and corrective actions should be done.

5.5 Suggestions for Further Research

Finally, the study suggests that a study be carried out to assess why more male nurses abuse opioids, yet they constitute only a third as compared to their female colleagues. The study also suggests further research of rates and causes of abuse among other healthcare workers.
REFERENCES


*Daily Nation* (2018). ‘Nurse who was addicted to painkillers warns it can happen to anyone. Tuesday, August 7, p.13.


Gall, Borg and Gall (      )


APPENDICES

APPENDIX I: Informed Consent Form

Study title: Assessing Factors Contributing to Opioid Abuse among Nurses working in a Tertiary Referral Hospital

Principal Investigator: Thiga Anthony Kingori

Institution: MPH student Maseno University

Supervisors: Prof; Rosebella Otieno and Prof; David Sang

Introduction

You are being invited to participate in a research study on Assessment of contributing factors of opioid abuse among Nurses. This will take 20-30 mins of your time.

The study is in partial fulfillment towards MPH accreditation, Maseno University. The purpose of this consent form is to give you information which will help you decide whether to participate in the study or not. Feel free to ask any questions on the purpose of the study, the risks and benefits of participating, your rights and anything else that is not clear. When your questions are answered you may decide to continue with the study or you may decline. Your decision is entirely voluntary and you may opt to withdraw at any stage of research and this will not affect your services or your employment. The study is trying to understand contributing factors of opioids addiction among nurses in attempt to help hospital management in decriminalization of addicts and in implementation of a hospital aided rehabilitation centre.

The study has been approved by KNH-UoN ERC protocol no-----------------------------

Approved by Maseno university research and ethics committee protocol no------------------

PROCEDURES

The study participants will be recruited at random among the nurses working in different departments in Kenyatta National Hospital. The participants are required to willingly consent to participate before been handed the self administered anonymous questionnaire. You are free to leave blank any question that you are not comfortable in answering. You will be assigned a random number such as Accident and emergency 1, to avoid re-interviewing. No individual identities will be used in any reports or publications that may result in this study. Any additional information about the study that arises during the course of the research will be provided to you. Information about the final study results will be available through the KNH research and programs department as well as Maseno university research and ethics department.
RISKS

Your involvement is assured of absolutely no risks, anonymity and confidentiality is assured and only the study participant will have access to your information. Every effort will be made to maintain privacy of participants and information during the study.

BENEFITS

The study will help in identifying the contributing factors of opioid abuse among nurses in Kenyatta national hospital. The study will also help in identifying the major opioids at risk of abuse in the hospital. The study will also help in easily identifying nurses at risk and help in treatment and rehabilitation of such employees. The study will also help the hospital administration and employees in formulating strategies and policies that help in risk reduction strategies. There will be no direct payment for your participation, which is completely voluntary.

METHOD

When you agree to participate in the study, you will be given a self administered questionnaire which you will be required to respond to the questions and you may seek any clarification from your trained interviewer, this will take you 20-30 minutes. The questionnaire will be coded for example, Theatre 1, to ensure you are not interviewed twice and also to ensure the questionnaires remain anonymous.

CONTACTS

If you have any questions about the study you can raise concern through:

Anthony Kingori Thiga
Researcher
Email: antholook@yahoo.com

Prof Rosebella Onyango
Supervisor
Email: rosebella.onyango@gmail.com

Prof David Sang
Supervisor
Email: sangdavid@ymail.com

The chairman,
KNH-UoN ERC
Email: uonknh_erc@uonbi.ac.ke
Website: http://www.erc.uonbi.ac.ke
(254-020) 2726300 Ext 44355
PARTICIPANT’S STATEMENT

I have read this consent form and I have understood. I have had all my questions answered in a language that I can understand. I understand that my participation is voluntary and I can choose to withdraw at any stage. I understand all efforts will be made to keep my personal identity confidential. By signing the consent form, I have not given any legal rights that I have as a participant in the research study.

I therefore agree to participate in this study. Signature -------------------------
APPENDIX II: Data Collection Instrument

Serial No……………………………………

Consent

I hereby agree that I have read the above information regarding this study.

I offer myself and consent to participate in this study by filling the following Questionnaire

Sign ……………………………… Date……………………………………

Instructions

Do not write your name.

Tick the appropriate box to indicate your response.

Section A: Social Demographic (Tick the response) □

1. Gender? i) Female □ ii) Male □

2. Years of working experience_______________________

3. Employment Status

   i) Permanent □ ii) Contract □ iii) Casual □

4. Academic Qualification:

   i. Certificate □
   ii. Diploma □
   iii. Degree □
   iv. Masters □
   v. PhD – Doctorate □
   vi. Other ________________________

5. Do you provide direct care to patients?

   I. yes □ no □
6. What is your marital status?
   Single
   Married
   Separated
   Divorced
   Widowed

7. In the course of your working at KNH, have you been admitted to hospital due to sickness?
   No
   1 – 3 times
   4 – 6 times
   More than 6 times

If you have specify the sickness……………………………………………………………….
### Section B: Study Objectives based Questions

1. In your lifetime, which of the following substances have ever used?

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Tobacco Products (Cigarettes, Chewing Tobacco, Cigars etc)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Alcoholic Beverages (Beer, Wines, Spirits etc)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Cannabis (Marijuana, Pot, Grass, Hash etc)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Cocaine (Coke, Crack etc)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Amphetamines type Stimulant (Speed, Diet Pill, and Ecstasy etc)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Inhalants (Nitrous, Glue, Petrol, Thinner etc)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Sedatives or Sleeping Pills (Valium, Serepax, Dormicum etc)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Hallucinogens (LSD Acid, etc)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Opioids addiction (Heroin, Codeine, Pethidine, Morphine, Trama etc)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Opioids prescribed for treatment purposes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Others, Specify _________________________________</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. Frequency of using the drugs in the past three months

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Once or Twice</th>
<th>Monthly</th>
<th>Weekly</th>
<th>Daily or almost daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>In the past three(3) months, how often have you used the substances you mentioned</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>During the past 3 months how often have you had a strong desire or urge to use the drugs?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>During the past three months, how often has your use of mentioned drug led to health, social legal or financial problems?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>During the past 3 months, how often have you failed to do what is normally expected because of using the above drug?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3. **Extent of drug use**

<table>
<thead>
<tr>
<th>Question</th>
<th>In the past 3 months</th>
<th>Not in the past 3 months</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Has a friend, relative or anyone else ever expressed concern about your use of drugs?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Have you ever tried and failed to control, cut down or stop using the mentioned drugs?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Have you ever used any drug of addiction by injection?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. **How many of your fellow colleagues in your department have had a problem with the following drugs, tick against the number in each column**

<table>
<thead>
<tr>
<th>Drug</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>≥5</th>
<th>None</th>
<th>males</th>
<th>females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pethidine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morphine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tramal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dormicum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All the above</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other (specify)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5. How was the colleague using above controlled substance discovered or noted? (Tick all that apply)

<table>
<thead>
<tr>
<th>Voluntary Admission</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Witnessed Admission</td>
<td></td>
</tr>
<tr>
<td>Behavioral Changes Examples of behaviors’ after using the drugs-----</td>
<td></td>
</tr>
<tr>
<td>Work Related Problems</td>
<td></td>
</tr>
<tr>
<td>Family Related Problems</td>
<td></td>
</tr>
<tr>
<td>Sickness or Death</td>
<td></td>
</tr>
</tbody>
</table>

6. What happened to this person? (Tick all that apply)

<table>
<thead>
<tr>
<th>Treated and rehabilitated</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Still Undergoing rehabilitation</td>
<td></td>
</tr>
<tr>
<td>Returned to work after rehabilitation</td>
<td></td>
</tr>
<tr>
<td>Recovering addict</td>
<td></td>
</tr>
<tr>
<td>Treated but relapsed</td>
<td></td>
</tr>
<tr>
<td>Dismissed</td>
<td></td>
</tr>
<tr>
<td>Still working</td>
<td></td>
</tr>
<tr>
<td>Absconded work</td>
<td></td>
</tr>
<tr>
<td>Died</td>
<td></td>
</tr>
<tr>
<td>Other (Specify)___________________</td>
<td></td>
</tr>
</tbody>
</table>
7. What in your opinion contributes to regular use of above mentioned substances to either you or your colleague? (Tick all that apply?)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Low self esteem</td>
</tr>
<tr>
<td>2</td>
<td>Coping with stressful hospital conditions</td>
</tr>
<tr>
<td>3</td>
<td>Family problems</td>
</tr>
<tr>
<td>4</td>
<td>Depression</td>
</tr>
<tr>
<td>5</td>
<td>Desperation</td>
</tr>
<tr>
<td>6</td>
<td>Peer pressure</td>
</tr>
<tr>
<td>7</td>
<td>Availability of substance</td>
</tr>
<tr>
<td>8</td>
<td>Overworking</td>
</tr>
<tr>
<td>9</td>
<td>Poor working relationships</td>
</tr>
<tr>
<td>10</td>
<td>Chronic illness</td>
</tr>
<tr>
<td>11</td>
<td>Lack of sleep</td>
</tr>
<tr>
<td>12</td>
<td>All the above</td>
</tr>
<tr>
<td>13</td>
<td>Any other (specify)</td>
</tr>
</tbody>
</table>
8. Which of the following complications have you witnessed when using above substances or to your colleagues using above substances? (Tick all that apply)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Lateness in coming to work</td>
</tr>
<tr>
<td>2.</td>
<td>Increased patient complains</td>
</tr>
<tr>
<td>3.</td>
<td>Increased colleagues complains</td>
</tr>
<tr>
<td>4.</td>
<td>Increased work place mistakes</td>
</tr>
<tr>
<td>5.</td>
<td>Increased family conflicts</td>
</tr>
<tr>
<td>6.</td>
<td>Increased self-aggression and irritability</td>
</tr>
<tr>
<td>7.</td>
<td>Legal troubles e.g. drunk driving</td>
</tr>
<tr>
<td>8.</td>
<td>Financial difficulties</td>
</tr>
<tr>
<td>9.</td>
<td>Increased admissions</td>
</tr>
<tr>
<td>10.</td>
<td>Mental disorders</td>
</tr>
<tr>
<td>11.</td>
<td>Death or others (Specify)</td>
</tr>
</tbody>
</table>

9. Is there any existing policy in your organization on drug use? Yes ☐ No ☐
   If Yes specify ____________________________________________________________.

10. Do you think the incidence of opioids abuse among nurses is increasing, decreasing, or its non-existent?
    a) Increasing ☐  b) Decreasing ☐  c) Non existence ☐
11. What in your opinion is contributing to your answer above?

12. Have you been sensitized on the provisions of alcohol drug and substance abuse policy?

   Yes   No

13. If yes, are copies of the policy available for reference to all staffs?

   Yes   No

14. If yes, what would you recommend to be included in your organization ADA (Alcohol and drug abuse) policy to better address issues related to drug abuse?

15. Are you aware of any activities undertaken in your organization to address drug abuse problems among staffs?

   Yes   No

16. If yes specify the activities? _______________________________
APPENDIX III: SGS Approval

MASENO UNIVERSITY
SCHOOL OF GRADUATE STUDIES

Office of the Dean

Our Ref: EL/ESM/00406/13

Private Bag, MASENO, KENYA
Tel:(057)351 22/351008/351011
FAX: 254-057-351153/351221
Email: sgs@maseno.ac.ke

Date: 21st February, 2018

TO WHOM IT MAY CONCERN

RE: PROPOSAL APPROVAL FOR THIGA ANTHONY KINGORI —
EL/ESM/00406/13

The above named is registered in the Master of Public Health programme in
the School of Public Health and Community Development, Maseno University.
This is to confirm that his research proposal titled “Assessing Factors
Contributing to Opioid Abuse among Nurses Working in Kenyatta National
Referral Hospital” has been approved for conduct of research subject to
obtaining all other permissions/clearances that may be required beforehand.

Prof. J.O. Agure
DEAN, SCHOOL OF GRADUATE STUDIES

Maseno University
ISO 9001:2008 Certified
APPENDIX IV: Ethics Approval

UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
P O BOX 18678 Code 00202
Telegram: varity
Tel: (254-4) 2726300 Ext 44355

KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 2726300-9
Fax: 725772
Telegram: MEDSUP, Nairobi

Ref: KNH-ERC/1A/77

Anthony Thiga Kingori
Reg. No. MPH/04/06/2013
School of Public Health and Community Development
Maseno University

Dear Anthony

REVISED RESEARCH PROPOSAL: ASSESSING FACTORS CONTRIBUTING TO OPIOID ABUSE AMONG NURSES WORKING IN A TERTIARY REFERRAL HOSPITAL (P682/09/2016)

This is to inform you that the KNH-UoN Ethics & Research Committee (KNH-UoN ERC) has reviewed and approved your above revised proposal. The approval period is from 8th March 2017 – 7th March 2018.

This approval is subject to compliance with the following requirements:

a) Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
b) All changes (amendments, deviations, violations etc) are submitted for review and approval by KNH-UoN ERC before implementation.
c) Death and life threatening problems and serious adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH-UoN ERC within 72 hours of notification.
d) Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH-UoN ERC within 72 hours.
e) Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (Attach a comprehensive progress report to support the renewal).
f) Clearance for export of biological specimens must be obtained from KNH-UoN ERC for each batch of shipment.
g) Submission of an executive summary report within 90 days upon completion of the study. This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/or plagiarism.

For more details consult the KNH-UoN ERC website http://www.erc.uonbi.ac.ke

"Protect to Discover"
Yours sincerely,

PROF. M. L. CHINDIA
SECRETARY, KNH-UoN ERC

c.c.  The Principal, College of Health Sciences, UoN
     The Director, CS, KNH
     The Assistant Director, Health Information, KNH
     The Chair, KNH-UoN ERC
     Supervisors:  Prof. Rosebella O. Onyango, Maseno University
                  Prof. David Sang, Maseno University
APPENDIX V: Study Registration Certificate

KNYATTA NATIONAL HOSPITAL
P.O. Box 20723-00202 Nairobi

Tel.: 2726300/2726450/2726565
Research & Programs: Ext. 44705
Fax: 2725272
Email: knhresearch@gmail.com

Study Registration Certificate

1. Name of the Principal Investigator/Researcher
   Thiga Anthony Kangiiri

2. Email address: achatleek@gmail.com Tel No. 0722327081

3. Contact person (if different from PI)

4. Email address: 
   Tel No.

5. Study Title
   Assessing Factors Contributing to Spousal Abuse among Nurses Working in a Psychiatric Referral Hospital.

6. Department where the study will be conducted
   Nursing Department
   (Please attach copy of Abstract)

7. Endorsed by Research Coordinator of the Department where the study will be conducted.
   Name: Christine Munge Signature: Mungo
   Date: 14th March 2017

8. Endorsed by Head of Department where study will be conducted.
   Name: Rosemary Muthoni Signature: Mutho
   Date: 14th March 2017

9. KNH UoN Ethics Research Committee approved study number: KNH-ERC/A/17
   (Please attach copy of ERC approval)

10. I, Thiga Anthony Kangiiri, commit to submit a report of my study findings to the Department where the study will be conducted and to the Department of Research and Programs.
    Signature: Kangiiri
    Date: 14/3/2017

11. Study Registration number (Dept/Number/Year) Nursing 15/2017
    (To be completed by Research and Programs Department)

12. Research and Program Stamp

   All studies conducted at Kenyatta National Hospital must be registered with the Department of Research and Programs and investigators must commit to share results with the hospital.

Version 2: August, 2014