PATTERNS OF HEAD AND NECK CANCERS AS SEEN AT THE CANCER DISEASES HOSPITAL IN LUSAKA, ZAMBIA

DR. UHENYA CHUMBA

H58/88810/2016

M.Med Otorhinolaryngology- Head and Neck Surgery Registrar

University of Nairobi

A Dissertation Submitted in Partial Fulfilment of the Requirements for the Award of the Degree of Master of Medicine in Otorhinolaryngology, Head and Neck Surgery (M. Med ORL-HNS) of the University of Nairobi

DECLARATION

This is my original work. It has not been presented for a degree award at any other university

Signed: ..... Date: 30/04/2021

Dr. Uhenya Chumba. BSc. HB, MB. ChB (University of Zambia)

Postgraduate Student M. Med Otorhinolaryngology, Head and Neck Surgery

Registration Number H58/88810/2016

University of Nairobi.

SUPERVISORS' APPROVAL

This dissertation has been submitted with our approval as university supervisors.

1) Dr. Peter Mugwe, MBChB, MMED (ENT)

Consultant Otorhinolaryngologist- Head and Neck Surgeon

Senior Lecturer

Department of Surgery

University of Nairobi

Sign: ..... Date: 30/4/2024

2) Dr. Samuel Nyagah, MBChB, MMED (ENT)

Consultant Otolaryngologist- Head and Neck Surgeon

Kenyatta National Hospital

Sign: ..... Date: 03/05/2021

3) Dr. Rachael Hapunda-Chibanga, MBChB, MMED (ENT)

Consultant Otolaryngologist- Head and Neck Surgeon

Lecturer

Department of Surgery

University of Zambia

28/04/2021

Sign: ..... Date: .....

APPROVAL BY THE DEPARTMENT

This dissertation has been submitted for examination with the approval of the Department of Surgery

Dr. Joyce Aswani

Thematic Head, Otorhinolaryngology Head and Neck Surgery,

Department of Surgery,

College of Health Sciences

University of Nairobi

Signed: ..... Date: 17-05-2021

Dr. Julius Kiboi

Chairman

Department of Surgery

School of Medicine

University of Nairobi

DEPARTMENT OF SURGERY
COLLEGE OF HEALTH SCIENCES

Signed: ..... Date: 17/5/2021

DECLARATION OF ORIGINALITY FORM

Name of Student: Dr. Uhenya Chumba

Registration Number: H58/88810/2016

College: Health Sciences

Faculty/School/ Institution: School of medicine

Department: Surgery

Course Name: Otorhinolaryngology, Head and Neck Surgery

Title of work" PATTERNS OF HEAD AND NECK CANCERS AS SEEN AT THE CANCER DISEASES HOSPITAL IN LUSAKA ZAMBIA"

DECLARATION

1. I understand what plagiarism is and I am aware of the University's policy in this regard.
2. I declare that this thesis is my original work and has not been submitted elsewhere for examination, award of a degree or publication. Where other people's work or my work has been used, this has been acknowledged in accordance with the University of Nairobi's requirements.
3. I have not sought or used the services of any professional agencies to produce this work.
4. I have not allowed and shall not allow anyone to copy my work with the intention of passing it off as his/ her own work.
5. I understand that any false claim in respect of this work shall result in disciplinary action, in accordance with the University Plagiarism Policy.

Signature..... Date 30/04/2021

DEDICATION

I dedicate this work to my father, Mr. Robert Chumba and my late mother Mrs. Esther Chumba. Their sacrifices, encouragement and hard work throughout my life made me aspire for academic excellence.

I also dedicate this work to the three M's in my life: my husband Mwansa Kapambwe Chalwe who encouraged me throughout my study even when I was worn out; and our two children Matthias Mutunga Chalwe and Meza Hannah Chalwe who made this journey worthwhile.

Lastly, I dedicate this study to my mother- in- law Mrs. Justina Kapambwe, my brothers Sambukila, Kafunga, Pangu and Halisenu Chumba together with their families for their unwavering support.

ACKNOWLEDGEMENTS

I am grateful to the Lord Almighty that has seen me throughout this journey.

I am also thankful to my supervisors Dr. Peter Mugwe, Dr. Samuel Nyagah and Dr. Rachael Hapunda- Chibanga for their patience, guidance and support throughout this journey. I am also very grateful to the members of faculty of the ENT department from the University of Nairobi and the Kenyatta National Hospital who have all been my teachers.

Special thanks to the Cancer Diseases Hospital staff and my fellow colleagues for their invaluable input during my study.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS AND ACRONYMS

AJCC	American Joint Committee on Cancer
Ca	Cancer
CDH	Cancer Diseases Hospital
CT	Computerized Tomography
ENT	Ear Nose Throat
HNC	Head and Neck Cancers
HNSCC	Head and Neck Squamous Cell Carcinoma
HPV	Human Papilloma Virus
IUCC	International Union for Cancer Control
KNH	Kenyatta National Hospital
M: F	Male to Female ratio
MRI	Magnetic Resonance Imaging
NHRA	National Health Research Authority
NPC	Nasopharyngeal Carcinoma
SPSS	Statistical Package for the Social Sciences
TNM	Tumour Nodes Metastasis
UNZABREC	University of Zambia Biomedical Research Ethics Committee
UoN	University of Nairobi

LIST OF DEFINITIONS

1. **Hypopharynx**: the lower part of the pharynx, which includes the pyriform sinuses, the posterior surface of the larynx (post cricoid area) and the inferoposterior and the inferolateral pharyngeal walls.
2. **Larynx** (voice box): it is the region which contains the vocal cords and epiglottis.
3. **Major salivary glands** which include the parotid, submandibular and sublingual and **minor salivary glands** which are located throughout the submucosa of the mouth and upper aerodigestive tract including oral cavity.
4. **Nasopharynx**: this is the narrow tubular passage behind the nasal cavity which extends from the pharyngeal fornix superiorly to the pharyngeal isthmus inferiorly.
5. **Oral cavity**: these are structures which include, the lips, buccal mucosa, anterior tongue, floor of mouth, hard palate, upper gingiva, lower gingiva and retromolar trigone.
6. **Oropharynx**: the middle part of pharynx and it includes the tonsillar area, the base of the tongue, the soft palate and the posterior pharyngeal wall. It extends from the under surface of the soft palate superiorly to the posterior tongue and epiglottis inferiorly.
7. **Paranasal sinus**: a group of four paired air-filled spaces that surround the nasal cavity. They include the maxillary, ethmoid, sphenoid and frontal sinuses.
8. **Pharynx**: this is the region in the head and neck region which is divided into the nasopharynx, oropharynx and hypopharynx.

ABSTRACT

Background: Head and neck cancers are a growing burden of cancer throughout the world with a high morbidity and mortality. These tumours pose a serious public health problem since the majority of these patients present at an advanced stage of the disease.In Zambia, paucity of baseline data makes it difficult to know the pattern and magnitude of the burden of head and neck cancers.

Objective: To determine the pattern of head and neck cancers as seen at the Cancer Diseases Hospitalin Lusaka, Zambia.

Study Design: Hospital-based descriptive cross-sectional study

Methodology: Ninety eight patients with histologically confirmed Head and Neck cancers (HNC) who met the inclusion criteria were included in this study.A questionnaire was used fordata collection. This study was carried out over a period of 6 weeks from September to October 2020.

Data management and analysis: Data collected was analyzed using Statistical Package for the Social Sciences (SPSS) program version 21. Further analysis was done with Pearson chi squared test to correlate different variables with $P< 0.05$ being significant.

Results: There were 98 patients in this study, 53 (54.08%) females and45 (45.92%) males. The mean age of the patients was 47±13 years with more than 50% of the patients presenting in the 4^{th} and 5^{th} decade. Geographically, the rural areas of Zambia 56(57.1%) accounted for most of the patients with Lusaka Province having 23(23.5%) followed by Northern Province with 21(21.4%). The most common tumour site of the HNC observed was the larynx 25(25.5%) followed by the nasopharynx 18 (18.4%). The most common histology was squamous cell carcinoma 85(86.7%) and the majority of the patientspresented with late-stage disease, stage III (24.5%) and stage IV (51%). P value was > 0.05 for correlation of tumour site and various demographic variables.

Conclusion: HNC patients presented to the CDH from all the provinces of the country of Zambia with more than 2/3 of the patient load coming from Lusaka, Northern and Muchinga provinces. Majority of the patients presented with late-stage disease and squamous cell carcinoma was the most common histology and therefore public campaigns need to be done to raise awareness of HNC.

CHAPTER ONE
INTRODUCTION

1.0 Introduction

Head and neck malignancies are a growing burden of cancer throughout the World. There are more than 500,000 new cases that have been projected annually worldwide [1]. This represents the sixth most common cancer in the developed world [1]. According to the World Health Organization (WHO), worldwide incidence of Head and Neck Cancer (HNC) is 5.1% in male and 2.3% in female with an overall incidence of 3.7% [1]. HNC represent the 5th most common malignancy in males in high income countries with lower incidence in females (Male: Female(M:F), 2.1:4.1) [2]

Most HNC are squamous cell carcinomas that develop in the upper aerodigestive tract epithelium [4, 5]. This accounts for more than 90% of all the histological types in the Head and neck region [6, 7].HNC vary in their location, associated risk factors and histology. The risk factors for developing squamous cell carcinoma in the head and neck are mostly tobacco, alcohol, betel nut chewing, radiation exposure, Epstein Barr Virus (EBV) and Human papilloma virus (HPV) infection. Others include, diet poor in fruits and vegetables, genetic factors, poor oral hygiene, periodontal disease [3, 4, 8].

Socio-demographic and socio-economic characteristics of HNC vary among ethnic groups and in different geographical locations. Patients with these cancers are known to present with advanced disease and require immediate treatment [9]. HNC patients have thus been regarded as disproportionately socio-economically challenged and this has caused an increase in their mortality [10, 11]. Apart from this, low socioeconomic status among men has been shown to have a higher cancer mortality [12, 13].

1.1 Background

1.1.1 Pathology and Classification

Head and neck cancers arise from a variety of locations and structures within the head and neck region. Malignant tumours occur in the oral cavity, nasal cavities, paranasal sinuses, pharynx, larynx, ear, scalp, thyroid gland and salivary glands [14].

The head and neck region contains a wide diversity of structures and cell types including squamous mucosal epithelium, glandular structure, sinuses, bone, cartilage, muscles, nerves, vascular channels and lymphoid structure, all of which are potential sites for origin of malignancies [16].

There are various histology types of head and neck cancers and WHO classification of tumours of nasal cavity and paranasal sinuses encompasses over 50 tumour types for this site alone [16]. However, the vast majority of HNC are in the mucosa of the upper aerodigestive tract and are predominantly squamous cells in origin. Head and Neck Squamous cell carcinoma (HNSCC) accounts for up to 90% according to Jemal et al and Boyle P et al [6, 7]. Other histological types include lymphomas, blastomas, sarcomas and neuroendocrine tumors [17, 18]. These other histological types have not been classified to indicate their prevalence in the different anatomical sites of the head and the neck.

1.1.2 Risk Factors

The risk factors of head and neck malignancies are many. However, the major risk factors are tobacco smoking and alcohol consumption. Other risk factors include HPV infection which is associated primarily in the oropharyngeal malignancies. Epstein Barr Virus has been associated with nasopharyngeal carcinoma. Betel nut chewing, radiation exposure, vitamin deficiencies, occupational exposures, diet poor in fruits and vegetables, genetic factors are some of the other factors that pose a risk to developing HNC [3,4,8].

1.1.3 Presentation

Head and neck cancer presentations vary depending on the primary site. The common symptoms include; a non healing mucosal ulcer in the oral cavity, pain including sore throat, globus sensation in the throat, referred earache, difficulties swallowing and / pain associated with swallowing. These symptoms would point to an oral cavity, hypopharyngeal or oropharyngeal tumour. Hoarseness, difficulty breathing, chronic cough as the initial symptoms would more likely point to a laryngeal tumour. A neck mass associated with nose bleeding and nasal blockage point towards a nasopharyngeal tumour [1, 8]. The other constitutional symptoms of weight loss, general body malaise may be present.

1.1.4 Physical Examination

The clinician ought to make a careful thorough assessment of the head, neck, ears, nose and throat. These areas are inspected, followed by palpation of the mucous membrane, the floor of the mouth, the tongue, palate, tonsillar fossae, buccal and gingival mucosa and the posterior pharyngeal wall [20, 21, 22, 23, 24].

Neck examination to elicit nodal disease is vital. The size, number, and location on which side the neck lymph nodes are present is important as well. This will aid in staging the patient's disease [25].

Mirror examination is used to visualize lesions inside the mouth and /or the use of flexible fibre optic endoscope with a goal to examine all the mucosa in the posterior nasopharynx, oropharynx, hypopharynx and larynx [22, 23].

1.1.5 Imaging

Various imaging modalities are used to define the extent of the disease and to stage the various HNC. These modalities include Chest X-rays, Computer tomography (CT) scan, Magnetic resonance imaging (MRI) and positron emission tomography.

1.1.6 Biopsy

Histological diagnosis is important and thus biopsies of the lesion must be done under anaesthesia. When the patient is under anaesthesia, examination of the tumour extent and lymph node metastasis is also done for a more accurate staging [1, 8].

1.1.7 Staging

The TNM Staging model system of the American Joint Committee on Cancer and the International Union for Cancer Control is used to classify cancers of the head and neck [25]. The model assigns a numerical status (Stage 0, x, I, II, III, or IV) based on tumour size and/or location **(T)**, degree of lymph node involvement **(N)**, and presence or absence of distant metastasis **(M)**.

Lymph node involvement is typically defined as a late-stage disease (III and IV) regardless of the size or location of the primary tumour. However, an exception occurs in tumours related to HPV infection [25, 26]. TNM staging tables are separated according to the head and neck primary site of the tumour [25, 27].

1.1.8 Management

Head and neck cancer management is a multidisciplinary approach involving medical oncologists, radiation oncologist, head and neck surgeons, radiologists, speech therapists, social workers, psychologist, plastic and reconstructive surgeon and dentist [13].

The treatment of HNC varies according to primary site, tumour stage, patient treatment preferences and practitioner's expertise. Treatment modalities range from surgical to chemotherapy and radiotherapy with aim to cure or palliate the patient depending on all the other factors mentioned above [24].

1.1.9 Overall Purpose of the Study

The aim of this study was to investigate the patterns of Head and Neck Cancer patients presenting to the CDH for treatment. This study will add to local baseline data to help plan for healthcare delivery and management of the cancers at provincial and national level. Apart from this, the data that has been obtained here will contribute to the knowledge of the burden of HNC in Zambia and raise awareness thereby generating information for policies to be made.

1.1.10 Statement of the Problem

Head and neck cancers are a growing global burden with a high mortality and morbidity [1]. These cancers have primary sites in various parts of the head and neck and have varied presentations including a neck swelling, difficulty swallowing, difficulty breathing but to mention a few. Patients with these cancers require various medical and surgical interventions to accurately diagnose, stage the disease and reduce the morbidity and mortality caused by these cancers. Early diagnosis of HNC results in early treatment and a good outcome and prognosis of the disease.

In Zambia, the Head and Neck cancer burden has not been documented. The Cancer Diseases Hospital which offers treatment to many cancers has a paucity of information regarding the patterns of HNC that they treat.

CHAPTER TWO
LITERATURE REVIEW

2.1 Literature Review

The socio-demographic profile of patients with HNC has been studied in many regions of the World. Most of the studies have been retrospective studies and data obtained from hospital based registries or case series as opposed to population based data. Generally, various studies have been done and include the following;

In Zambia, the study done with data on HNC was a study done by Zyaambo et al in 2013. In this study, data was collected from the Zambia National Cancer Registry and it was reported that out of 12891 of all cancers registeredover a ten-year period (1999-2009), there were a total number 533 cases of HNC. This translates to 4.1% of all cancers. There were 324 males and 209 females [28]. This is in keeping with the global picture of the male to the female ratio being 2:1 to 4:1 [2]. However, the study did not reveal which specific areas in the head and neck region had the cancer or which histological diagnoses were common in these patients. Apart from this, the study did not show which provinces the patients came from, the stage at presentation or their socio- economic and socio-demographic characteristics.

Gathere et al and Onyango et al conducted similar studies in 2000 and 2006 respectively in Kenya. These studies revealed different results of the commonest site of HNC. Gathere et al found the commonest site of the HNC was the Oral cavity with 40.6% of all the recorded HNC whereas Onyango et al found the larynx as the commonest site with 39% of the cases [29, 30]. Onyango's study further went on to show other sites affected outside the aerodigestive pathway with the eye being the most commonly affected site [30]. Both studies however showed a M: F of 2:1 and squamous cell carcinoma as the common histological diagnosis.

Gilyoma et al in Tanzania like Gathere et al found that Oral cavity cancers were the most common HNC. Gilyoma like Nabukenya et al further reported that cigarette smoking and heavy alcohol consumption were the frequently identified risk factors [22]. Nabukenya however further went on to report that low income and low education status are more likely to present with late-stage disease [31].

Attar et al in Egypt did a study over an 8-year period from 1999 to 2006 with 1140 and found that the incidence of HNC in males was greater than that for females and the age of the patients was highest in 40-49 years for males and 30-39 years for females. The subsite analysis showed that males had the highest overall incidence for larynx and nasopharynx while females had the highest overall incidence for gum and mouth (except floor) and nasopharynx. The highest urban-rural incidence was observed for the subsites of paranasal sinus and larynx among males, and lip and floor of the mouth among females [32].

In Nigeria, Ologe et al and Lilly- Tariah et al both reported that nasal and paranasal sinus cancers were the most common primary site of the HNC [17, 26]. Lilly further on went to report that presentation of the diseased patients was late thus treatment was palliative with either surgery or chemotherapy or radiotherapy when available. It is evident that even in that same country but different geographical locations, socio-demographic characteristics vary for HNC. In Kolkata, a study done by Mallick S et al in 2013 after review of 100 records observed that the mean age of the patients was 56.3 years, 80% of the patients were males and 32.6% presented with stage III and IV in disease [33]. Another retrospective study done in India, in Uttar Pradesh, by Alam MS et al revealed that HNC accounts for 21.2% of total body cancer and 47% of all malignancies in males and 2.5% in females. This was out of a population of 850. Squamous cell carcinoma was the most common histological type (97%). The peak incidence was 40-60 years with male to female ratio of 16:1[23]. In this study, oral cancer was the most common HNC in patients less than 40 years and cancer of the oropharynx and larynx were common in those older than 40years [23].

Stoymor et al in Bulgaria and Busquet et al in Puerto Rico reported laryngeal cancers as the commonest sites of the HNC [34, 35]. Wilson et al in Australia reported that the highest site of HNC was in the oropharynx, followed by the larynx and hypopharynx [36].

Ethnic and racial groups differ in terms of cancer incidence and mortality. Vartanian et al conducted a cross sectional analysis and described these differences as due to demographic, socio-educational and occupational factors or due to food and tobacco consumption habits [37].

CHAPTER THREE

STUDY JUSTIFICATION AND METHODOLOGY

Head and neck malignancies are a growing global burden and at the CDH there is no study that has been done to ascertain the socio-demographic profile and the clinico-pathologic pattern of these patients with HNC. Socio-demographic characteristics have been shown to influence the time at which patients present for treatment at medical facilities. . In a resource limited country like Zambia, with only one cancer treatment centre, the CDH, socio-demographic characteristics and clinico- pathologic pattern are important in order to have local baseline data and plan for primary health care at the provincial level.

Knowledge of socio- demographics will help determine where these patients are coming from, what their socio- economic status are in order to plan for delivery of healthcare and treatment to the various provinces. Apart from this, the region of the cancer, the common histologies encountered and the stage at which the patients present with the cancer, coupled with the demographics will add to the knowledge resource

3.1 Research Question

What is the pattern of head and neck cancers in patients presenting to CDH in Lusaka?

3.2 Objectives of the Study

3.2.1 Broad Objective

To study the pattern of head and neck cancers in patients at CDH.

3.2.2 Specific Objectives

1. To determine the socio-demographic profile of patients with HNC
2. To determine the primary sites in the head and neck region with cancer
3. To determine the histological diagnosis and stage at presentation of the HNC patients at CDH

3.3 Research Methodology

3.3.1 Study Design

This study was a hospital- based descriptive cross-sectional study. Patients presenting with head and neck cancers to CDH were the target population.

3.3.2 Study Area

The study was carried out at the Cancer Diseases Hospital in Lusaka, Zambia. The CDH is the cancer treatment hospital which is located in the premises of the largest referral hospital in Zambia, the University Teaching Hospital, in Lusaka along Nationalist road, where all cancer patients are referred for treatment from various places across the whole country. The hospital has a reception area where hospital personnel are located and patients reporting for treatment and consultation first report before being attended to by clinicians.

3.3.3 Study Duration

This study took 6 weeks.

3.3.4 Inclusion Criteria

i) All patients presenting to CDH with a histopathological diagnosis of a primaryHNC, a CT scan of the neck, Chest X-ray and have been staged according to the AJCC (8th Edition)
ii) Patients who gave consent to the study

3.3.5 Exclusion Criteria

i) Patients who had metastatic neck disease with unknown primary
ii) Secondary malignancy in the head and neck region

3.3.6 Sampling

Convenient sampling method was used to recruit the cases of all consented patients who met the inclusion criteria.

3.4 Sample Size

Sample size was calculated using the formula[38];

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

Where,

n = Desired sample size

Z = value from standard normal distribution corresponding to desired confidence level (Z=1.96 for 95% CI)

P = expected true proportion estimated at 4.3%, from a study conducted by Zyaambo C. et al looking at the Cancers in Zambia: Evidence from the Zambia National Cancer Registry over a period of 10 years[28].

d = desired precision (0.05)

$$n_0 = \frac{1.96^2 x\ 0.043(1-0.043)}{0.05^2} = 63\ .$$

According to this calculation, 63 head and neck cancer patients were required to be recruited for the study. There were 98 patients recruited during the study period.

3.5 Procedure

Patients who presented to the CDH for treatment with any HNC were identified by the registration clerk. The clerk was asked to direct the patients with HNC to the principal investigator who was in the CDH consultation room. Patients below 18years were directed with their parents/ guardians to the principal investigator. The study was explained to the patients above 18 years old and to parents/ guardians of patients who were less than 18 years old and informed consent was obtained. For the patients less than 18years old, the study was explained to them and assent obtained. Consent was then sought from their parents/ guardians. The principal investigator then assessed if the patient met the inclusion criteria. If they did, the benefits and purpose of the study was explained and then, the principal investigator administered the questionnaire.

The questionnaire administered included: sociodemographic data, clinical data and pathological data. The clinical and pathology data was obtained from the medical records of the patient.

The data was entered in the questionnaire. See Appendix Ia, Ib II, III for the patient consent form, parental consent form, assent form and questionnaire respectively. The forms were administered in English, Bemba or Nyanja.Patients who did not meet the criteria for inclusion in the studycontinued to receive care at CDH.

3.6 Data Collection Tool

A structured questionnaire was used to gather information on the socio-demographic profile and stage of the HNC (APPENDIX III). The HNC was staged according to the AJCC staging manual, APPENDIX IV

3.7 Data Management and Storage

The data was collected using a data collection sheet. Data was entered in an excel spreadsheet where it was cleaned for errors and any other inconsistencies. At the end of data collection, the entire database in excel spreadsheet was exported into a designed computer database using statistical package for social sciences (SPSS) version 21. The research data was kept confidential and all the questionnaires locked in a file cabinet and secured. The raw data was coded and backed up for further study.

3.8 Data Analysis

Data analysis was conducted using SPSS statistics version 21. The ages were grouped based on the decade age standardization rates. Descriptive as well as the inferential statistics were used. In descriptive statistics, the characteristics of the participants were put in percentages, frequencies and mean scores. Standard deviation was determined for the continuous variables for example ages of the patients. The categorical variables wereanalyzed by calculating the percentages of participants in each level of the categorical variables.

The significant (P) value and correlation values were determined by Pearson chi squared test by correlating two variables at a time age, gender and site of tumour. $P< 0.05$ was considered significant and $P>0.05$ was considered insignificant.

3.9 Quality Assurance

The questionnaire was administered by the principal investigator who ensured that it was filled in appropriately so as to reduce errors in the data collection.

3.10 Ethical Considerations

A letter of approval was first obtained from KNH/ UoN ETHICS AND RESEARCH COMMITTEE to carry out this study. After this approval, Ethical clearance and approval to carry out this study was obtained from the University of Zambia Biomedical Research Ethics Committee (UNZABREC) and the National Health Research Authority (NHRA) in Zambia.Permission from the Cancer Diseases Hospital management was also obtained prior to commencement of the study.

Informed consent was obtained from the patient if they were above 18years old or from the caregiver if they were less than 18 years old explaining to them the objective and methodology of the study. The patients were informed of the benefits of the study being building the local knowledge of HNC in Zambia. The patients' privacy was maintained by ensuring that only one patient was attended to in the consultation room. No single cost was incurred by the patient.

3.11 Study Result Dissemination Plan

The results will be submitted to the university in form of a thesis. The findings of the study will also be shared with Cancer Diseases Hospital, National Health Research Authority, presented in medical conferences, and published in medical journals and public media where necessary for the benefit of the medical profession and the public. A soft copy of the dissertation will be available at the UoN e-repository on the UoN website (http://erepository.uonbi.ac.ke). Hard copies of the study will be availed at the UoN Department of Surgery, College of Health Sciences Library and the ENT department library. A manuscript will be prepared and submitted for publication in a scientific journal and presented in medical conferencesas part of the fulfilment of Master of Medicine in Otorhinolaryngology, Head and Neck Surgery.There were no conflicts of interest in this study by the principal investigator, supervisors and the Hospital.

CHAPTER FOUR

RESULTS

4.1 Socio- demographic Characteristics of the Patients

This section shows the socio- demographic characteristics of the patients.

4.1.1 Distribution of the Patients by Age and Sex

A total of 98 patients were included in the study. Females constituted a larger proportion of the study 53 (54%) compared to males 45 (46%). The mean age of the patients was 47± 13 years. The youngest patient was 20 years and the oldest was 80 years. Most of the patients were aged between 31 and 40 years (4th decade) at 26.5% followed closely by those aged 41-50 years old (5th decade) as shown in the figure below.

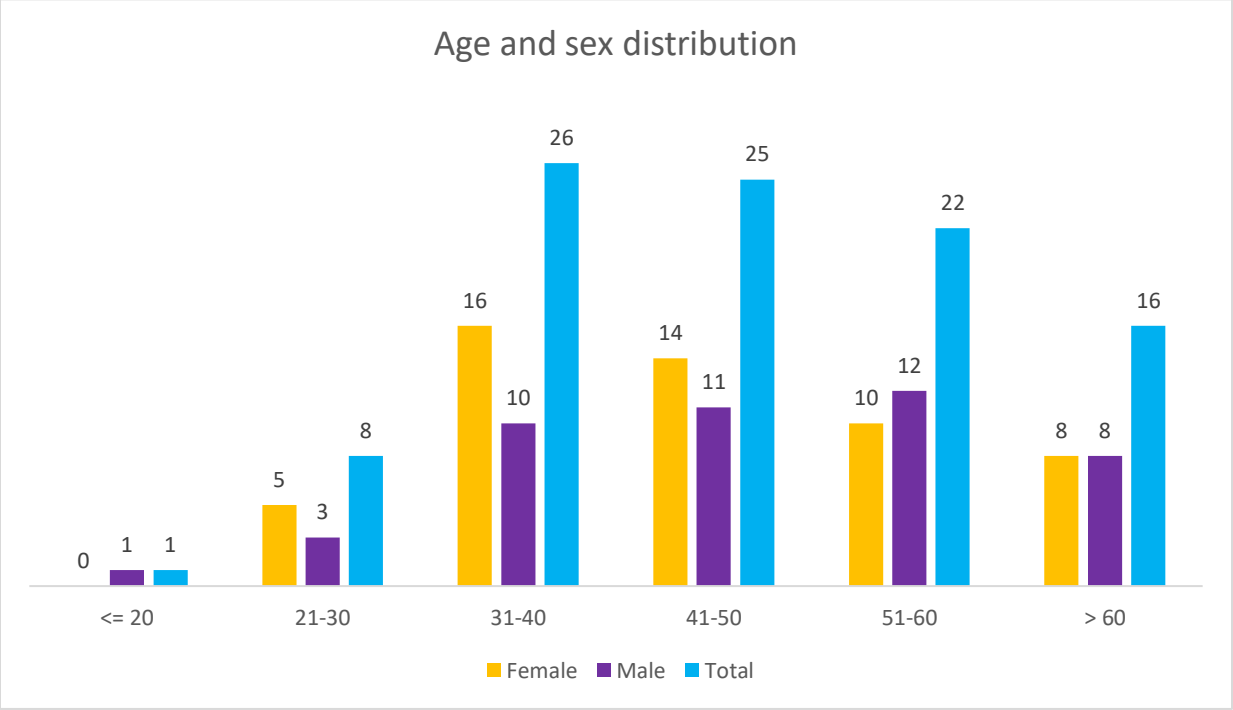


Figure 1: Age and sex distribution of the patients with head and neck cancer

4.1.2 Distribution of Patients by Region

The figure below shows the distribution of patients**.** Most of the cancer patients were from rural areas 56(57.1%). Patients coming from urban areas were 42(42.9%).

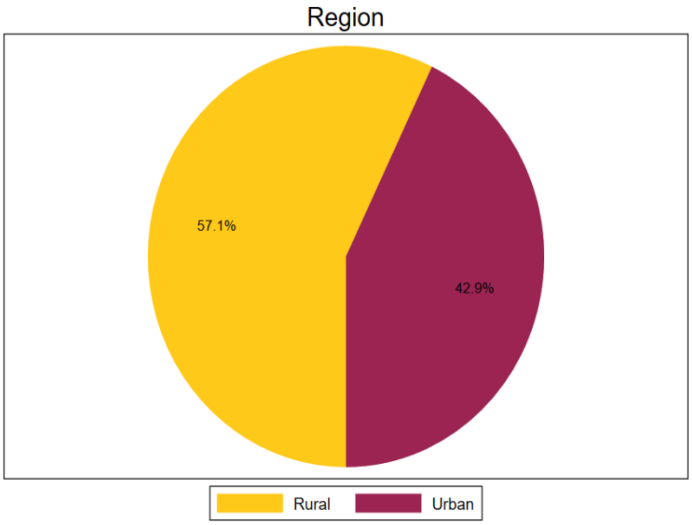


Figure 2: Geographical distribution of patients according to region

4.1.3 Distribution of the Patients by Province

Most of the patients were from Lusaka province 23.5% followed by Northern Province and Muchinga provinces at 21.4%. Western province accounted for the least patients at 3.1% as shown below.

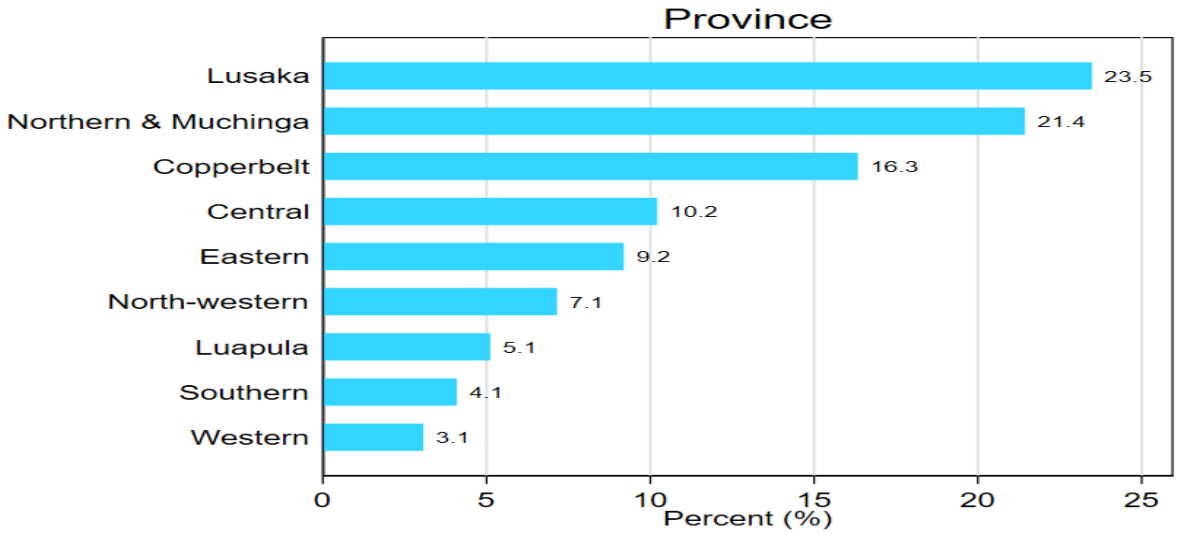


Figure 3: Geographical distribution of Patients according to province

4.1.4 Distribution of Patients by Level of Education Attained

More than half of the patients, 55 (56.1%) had primary education as their highest level of education. Only 2(3.1%) patients had attained tertiary level of education as shown in the figure below.

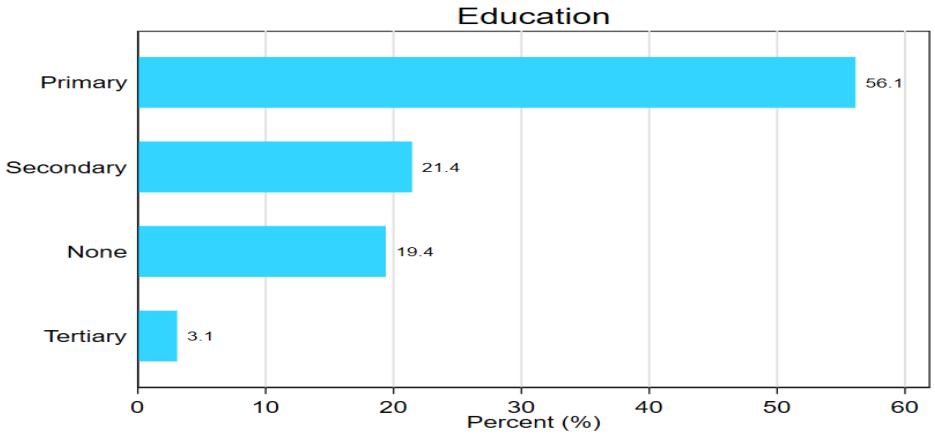


Figure 4: Highest level of education attained by the patients

4.1.5 Distribution of Patients by Occupation

Fifty five patients indicated they had an occupation and the majority of the patients were farmers at 31 (55.4%) as depicted in table 1 below.

Table 1: Occupation of the patients

Occupation	Number	Percent (%)
Farmer	31	55.36
Business	11	19.64
Bricklayer	3	5.36
Carpenter	3	5.36
Hairdresser	2	3.57
Banker	1	1.79
Fisherman	1	1.79
Mechanic	1	1.79
Tailor	1	1.79
Teacher	1	1.79

4.2 History of Tobacco Use and Alcohol Consumption

A total of 30(30.6%) cancer patients consumed both alcohol and tobacco. Further, alcohol consumption was more common than tobacco consumption with 27(27.5%) patients having reported alcohol consumption only and 10 (10.2%) accounted for tobacco. Further, 31(31.6%) patients reported that they did not consume alcohol or tobacco.

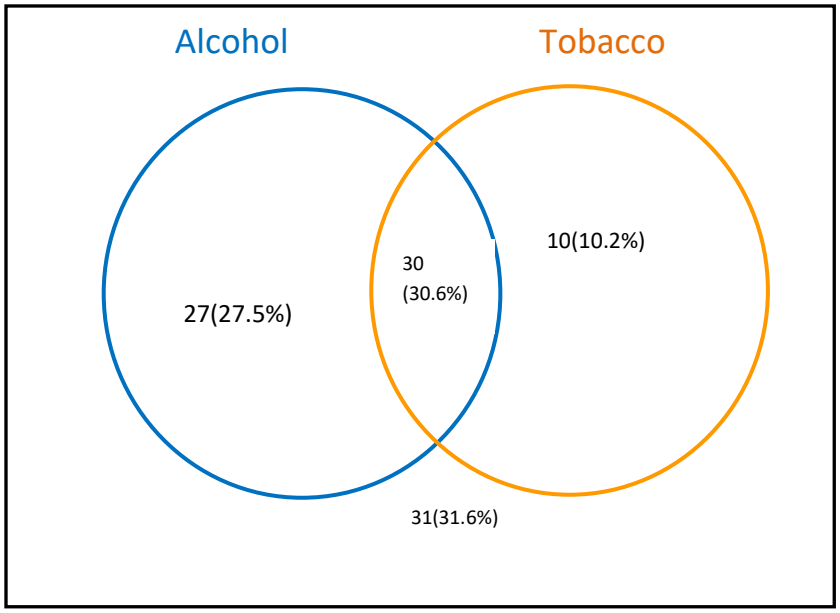


Figure 5: Alcohol and tobacco consumption

4.2.1 Distribution of Form of Tobacco Consumed

The following figure shows the distribution of the different forms of tobacco consumed. Most of the patients, who consumed tobacco, used it in the form of cigarette smoking (75%). The average pack years were 7.8. The least number of pack years consumed was 4 and the highest was 50.

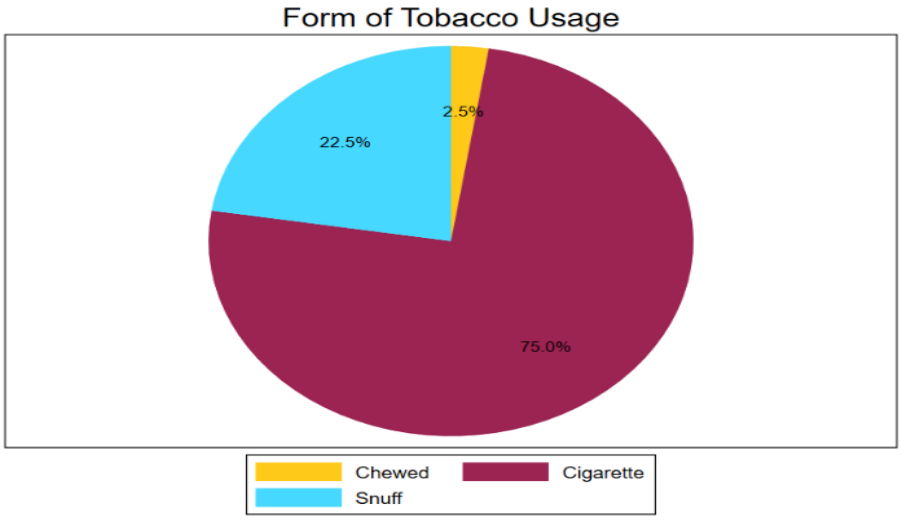


Figure 6: Form of tobacco consumed

4.2.2 Distribution of Patients Who Consume Alcohol

Fifty-seven patients (58.2%) gave a history of alcohol consumption whereas those who did not consume alcohol were 41(41.8%) as shown below.

4.3 Prevalence of Cancer by Primary Site

Tumours in the larynx 25 (25.5%) formed the majority of the tumor site followed by tumors in theNasopharynx 18.4%. The least common site for tumours among patients was the thyroid gland at only 2.0% (2/98).

Table 2: Prevalence of tumour according to the primary site

Tumour Site	Freq.	Percent (%)
Larynx	25	25.5
Nasopharynx	18	18.4
Oral cavity	16	16.3
Oropharynx	16	16.3
Salivary gland	9	9.2
Sinonasal	8	8.2
Hypopharynx	4	4.1
Thyroid gland	2	2.0

4.4 Histological Type and Grading of HNC

The table below shows the histological diagnosis and grade of differentiation of the HNC.

Table 3: Histological diagnoses and Grading of the HNC

Characteristic		Frequency	Percent
Histology	Squamous cell carcinoma	85	86.7
	Adenoid cystic carcinoma	6	6.1
	Rhabdomyosarcoma Alveolar	4	4.1
	Anaplastic carcinoma	2	2.0
	Adenocarcinoma	1	1.0
Grading	Well differentiated	58	70
	Moderately differentiated	17	19.3
	Poorly differentiated	13	14.7

The majority of cancer patients had histology of Squamous cell carcinoma at 85(86.7%) and well differentiated was the most common grade of tumour at 70%.

4.5 Stage of the HNC at Presentation

The following section shows the AJCC stage of the patients at presentation.

4.5.1 Tumour Node Metastasis (TNM) Stage at Presentation

Most of the patients presented with advanced disease. T3 and T4 tumours accounted for 37(37.8%) and 36(36.7%) respectively. The majority of the cancers were staged at N0, 47 (48.0%) patients followed by stage N1 in 26(26.53%) patients. Eighty-three (84.69%) patients presented with no distant metastasis.

Table 4: T, N and M stage of the HNC at presentation

TNM	TNM stage	Frequency	Percent
T	T1	5	5.10
	T2	20	20.41
	T3	37	37.76
	T4	36	36.73
N	N0	47	47.96
	N1	26	26.53
	N2	22	22.45
	N3	3	3.06
M	M0	83	84.69
	M1	15	15.31

4.5.2 Stage (I-IV) at Presentation

Most patients presented with late-stage disease; stage IV (51.0%) followed by stage III (24.5%) as shown below.

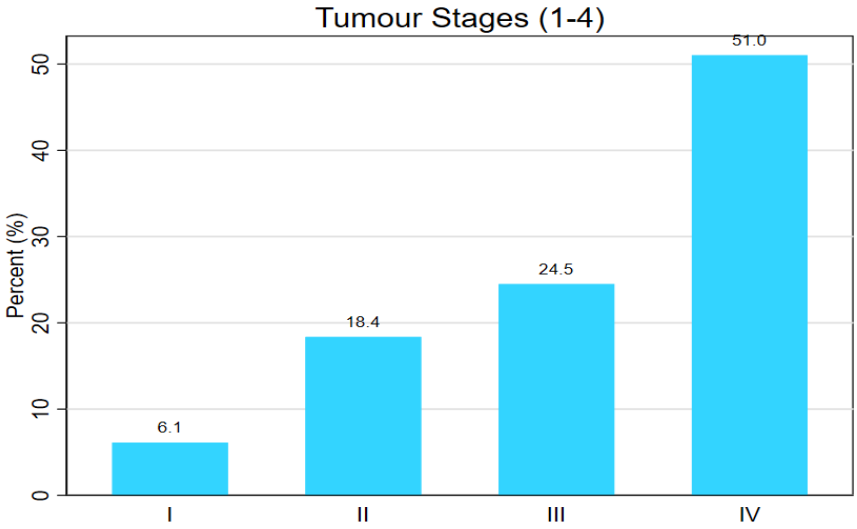


Figure 7: Stage at presentation of the HNC

4.5.3 Tumour Site and Stage at Presentation

The majority of the patients presented with stage IV disease 50(51%) and the majority of the patients in this stage had tumours in their nasopharynx 11(11.22%). Most of the patients who presented with early stage I and stage II, had laryngeal cancers. The Pr value is > than 0.05, therefore, the tumour site was not statistically significant in determining the stage of the tumour.

Table 5: Tumour site and Stage at presentation

	Tumor Stages (1-4)					
Tumor site	**I**	**II**	**III**	**IV**	**Total**	**Pearson Chi^2**
Hypopharynx	0	1	1	2	4	0.775
Larynx	4	5	7	9	25	
Major salivary gland	0	1	1	7	9	
Nasopharynx	0	4	3	11	18	
Oral cavity	1	4	5	6	16	
Oropharynx	1	1	5	9	16	
Sino-nasal	0	2	2	4	8	
Thyroid gland	0	0	0	2	2	
Total	6	18	24	50	98	

4.6 Correlation of the HNC and the Demographic Variables

This section shows the correlation of the HNC and demographic variables.

4.6.1 Correlation of the Primary Site of Cancer withAge

Table 6: Correlation of the primary site of cancer across the age groups

Tumour site	< 20	21-30	31-40	41-50	51-60	> 60	Pearson Chi^2(35)
Larynx	0.0	0.0	28.0	32.0	24.0	16.0	0.303
Nasopharynx	0.0	11.1	27.8	16.7	27.8	16.7	
Oral cavity	0.0	18.8	25.0	25.0	25.0	6.3	
Oropharynx	0.0	0.0	43.8	37.5	18.8	0.0	
Major salivary gland	0.0	22.2	11.1	11.1	22.2	33.3	
Sino-nasal	12.5	12.5	12.5	25.0	12.5	25.0	
Hypopharynx	0.0	0.0	25.0	25.0	0.0	50.0	
Thyroid gland	0.0	0.0	0.0	0.0	50.0	50.0	

Laryngeal cancers were more common in patients aged 41-50 years old at 32%. Oropharyngeal cancers were more common in the 31-40 year olds at 43.8%. Thyroid cancers were only present in patients more than 50 years old. Age was not a statistically significant determinant of where a cancer patient will have a tumour. This is because the Pearson chi-square had a p-value of 0.303, which is higher than 95% level of significance.

Table 7: Correlation of the primary site of cancer within the age groups

Tumour site	< 20	21-30	31-40	41-50	51-60	> 60	Pearson Chi2(35)
Larynx	0.0	0.0	26.9	32.0	27.3	25.0	0.303
Nasopharynx	0.0	25.0	19.2	12.0	22.7	18.8	
Oral cavity	0.0	37.5	15.4	16.0	18.2	6.3	
Oropharynx	0.0	0.0	26.9	24.0	13.6	0.0	
Salivary gland	0.0	25.0	3.8	4.0	9.1	18.8	
Sino-nasal	100.0	12.5	3.8	8.0	4.5	12.5	
Hypopharynx	0.0	0.0	3.8	4.0	0.0	12.5	
Thyroid gland	0.0	0.0	0.0	0.0	4.5	6.3	
Total (%)	100	100	100	100	100	100	

The patient who was less than 20years old had a sinonasal tumor. In the 31-40 year olds, the most common cancers were the oropharyngeal cancer and laryngeal cancers both representing 26.9% of the cancers. In patients aged more than 41 years old, laryngeal cancers were the most common cancers they presented with tothe CDH.

4.6.2 Correlation of the Primary Site of Cancerwith Provinces

Table 8: Correlation of the primary site of cancer across the provinces

Province	Hypopharynx (%)	Larynx (%)	Major salivary gland (%)	Nasopharynx (%)	Oral cavity (%)	Oropharynx (%)	Sino-nasal (%)	Thyroid gland (%)	Pearson $Chi^2(35)$
Central	0.0	16.0	0.0	5.6	12.5	18.8	0.0	0.0	0.816
Copperbelt	25.0	8.0	11.1	11.1	12.5	37.5	25.0	0.0	
Eastern	0.0	8.0	11.1	11.1	6.3	12.5	0.0	50.0	
Luapula	0.0	4.0	0.0	5.6	6.3	6.3	12.5	0.0	
Lusaka	25.0	28.0	22.2	22.2	31.3	6.3	37.5	0.0	
North Western	0.0	8.0	11.1	5.6	6.3	6.3	0.0	50.0	
Northern & Muchinga	25.0	20.0	33.3	27.8	18.8	12.5	25.0	0.0	
Southern	25.0	8.0	0.0	0.0	6.3	0.0	0.0	0.0	
Western	0.0	0.0	11.1	11.1	0.0	0.0	0.0	0.0	
Total	100	100	100	100	100	100	100	100	

The most common cancer, laryngeal cancer, was seen mostly in patients coming from Lusaka province at 28% followed by Northern Province at 20%. The second most common cancer, nasopharyngeal cancer, was seen mostly in patients coming from Northern Province at 27.8% followed by Laryngeal cancer at 22.2% coming from Lusaka. The two cases of Thyroid cancer each came from Eastern and Lusaka provinces as depicted above.

Table 9: **Correlation of the primary site of cancer within the province**

Province	Hypopharynx (%)	Larynx (%)	Major salivary gland (%)	Nasopharynx (%)	Oral cavity (%)	Oropharynx (%)	Sino-nasal (%)	Thyroid gland (%)	Pearson Chi^2
Central	0.0	40.0	0.0	10.0	20.0	30.0	0.0	0.0	
Copperbelt	6.3	12.5	6.3	12.5	12.5	37.5	12.5	0.0	
Eastern	0.0	22.2	11.1	22.2	11.1	22.2	0.0	11.1	
Luapula	0.0	20.0	0.0	20.0	20.0	20.0	20.0	0.0	
Lusaka	4.3	30.4	8.7	17.4	21.7	4.3	13.0	0.0	0.816
North Western	0.0	28.6	14.3	14.3	14.3	14.3	0.0	14.3	
Northern &Muchinga	4.8	23.8	14.3	23.8	14.3	9.5	9.5	0.0	
Southern	25.0	50.0	0.0	0.0	25.0	0.0	0.0	0.0	
Western	0.0	0.0	33.3	66.7	0.0	0.0	0.0	0.0	

The most common cancer in Lusaka province was the laryngeal cancer at 30.4% and the least was hypopharyngeal cancer at 4.3% of all the cancers that were coming from Lusaka. On the other hand, laryngeal cancers and nasopharyngeal cancers were tied at 23.8% each from Northern Province with the least cancer being hypopharyngeal cancer just like Lusaka province. There was no statistical significance of tumour site and province. The p value was >0.816.

4.6.3 Correlation of the Primary Site of Cancer with Sex

Table 10: Correlation of the primary site of cancer across the sexes

Tumor site	Female (%)	Male (%)	Pearson Chi^2
Larynx	48	52	
Nasopharynx	61	39	
Oropharynx	56	44	0.808
Oral cavity	50	50	
Salivary gland	67	33	
Sino-nasal	63	38	
Hypopharynx	25	75	
Thyroid gland	50	50	

Laryngeal and Hypopharyngeal cancers were more common in males than females at 52 and 75% respectively. The ratio of male to female in these cancers was 1.08:1 and 3:1 respectively. Oral cavity cancers and thyroid cancers had an equal occurrence in both sexes at the ratio 1:1, as shown above. There was no statistical significance in occurrence of tumour in any particular sex as was shown with a pvalue of 0.808.

Table 11: Correlation of the primary site of cancer within the sexes

Tumor site	**Female (%)**	**Male (%)**	**PearsonChi^2**
Larynx	23	29	0.808
Nasopharynx	21	16	
Oropharynx	17	16	
Oral cavity	15	18	
Major salivary gland	11	7	
Sino-nasal	9	7	
Hypopharynx	2	7	
Thyroid gland	2	2	
Total	100	100	

In both females and males, laryngeal cancers were the most prevalent cancers at 23% and 29% respectively followed by nasopharyngeal cancers in females and oral cavity tumours in males at 21% and 18% respectively. Thyroid gland cancers were the least common cancers at 2% in each of the sexes.

Map of Zambia Showing the Distribution of HNC Patients

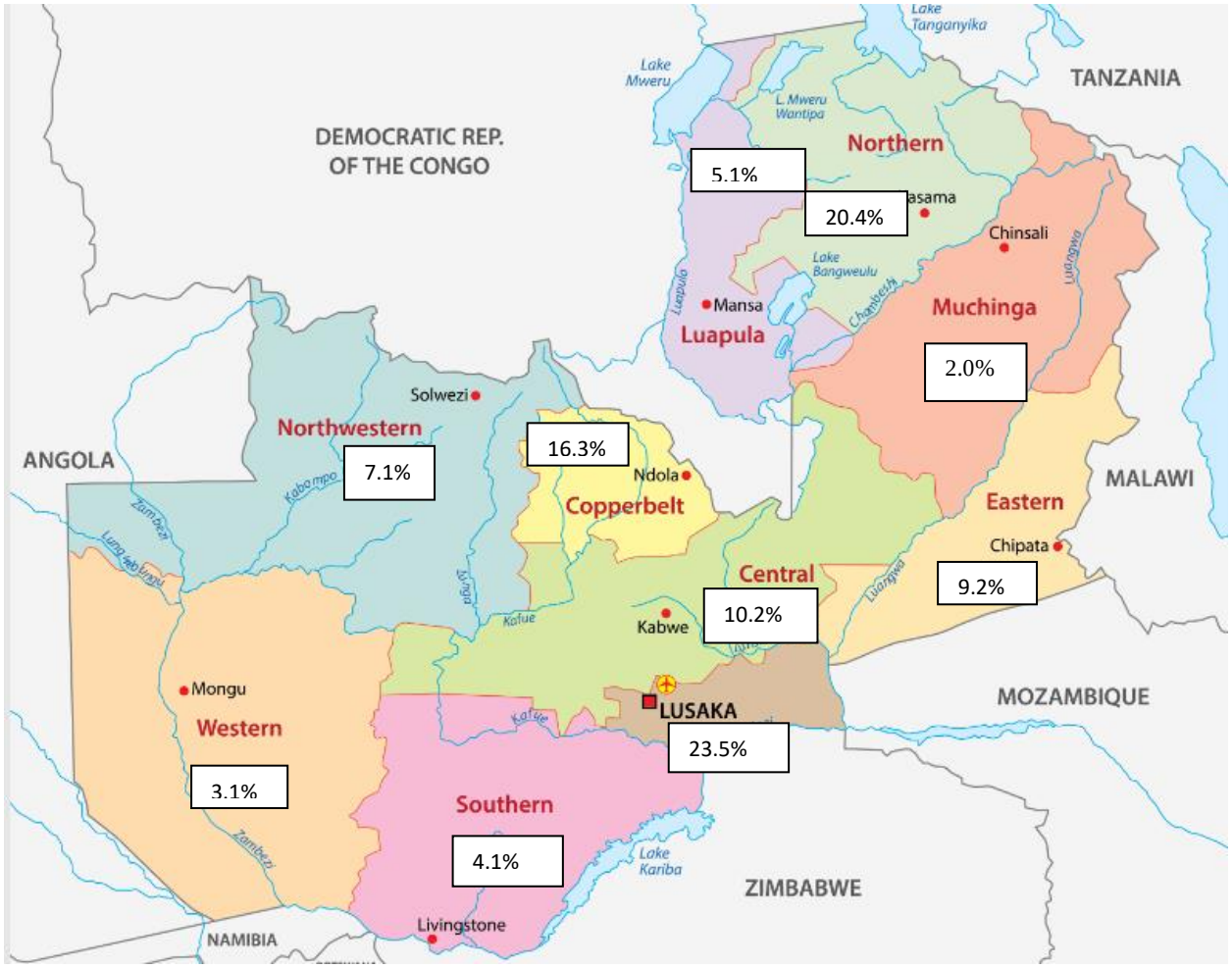


Figure 8: Map of Zambia adapted from https://www.worldatlas.com/maps/zambia

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 Discussion

This study is the first study to identify the patterns of HNC seen at the CDH. Our study has revealed the incidence of HNC was higher among females than males with the ratio of 1.18:1. According to data from the International Agency for Research on Cancer, cancers in Zambia have a higher female prevalence compared to males [39]. This data is similar to that obtained in Nigeria by Ologe et al [16] in which they also found females with HNC had a higher incidence compared to males. The female to male ratio was 1.02:1. This is reflective of the national population demographics which show that females are more than males [40]. However, there is a need for more research to accurately determine the differences in incidence. Other studies in Africa and globally show the incidence of HNC in males to be more than females [8, 23, 27, 30- 32].

In this study, the highest incidence of HNC was observed in the fourth decade of life followed by the fifth decade of life, similar to Nwawolo et al study [3]. Our study also shows that there were more females with HNC within the age range of 21years to 50years whereas males were more dominant in the 51-60 age group. In Egypt however, HNC were more prevalent in patients aged more than 70 years [32]. Other studies in Africa appear to have HNC more prevalent in the fourth and fifth decades of life unlike Caucasians who seem to have an older age group (sixth and seventh decade) [41]. The high incidence of HNC in this younger age group may be attributed to the rise in young adults in Zambia engaging in smoking tobacco and alcohol consumption. There were 67(70%) patients in our study who consumed at least one of these substances and 30(30.5%) consumed both alcohol and tobacco. The role of alcohol and tobacco in the carcinogenesis of cancers of the head and neck and when ingested together is known. When ingested together, the combined effect is potentiated and the final relative risk is increased [8]. Alcohol serves as a solvent to increase cellular absorption of the nitrosamines and polycyclic hydrocarbons present in tobacco, enhancing mucosal exposure to carcinogens. Exposure to these risk factors has also been linked to low socioeconomic status and low education status attained [31, 36] .In our study, more than 56% of the study population had only attained primary level of education. This result tallies with the national demographics which show the highest level of education attained by the majority of people is primary school education [40].

Most of the patients in our study came from the rural areas of Zambia, accounting for 57% and Lusaka province, which is in the urban region however, was the province where most of the patients came from. It accounted for 23% of the patients, followed by Muchinga and Northern provinces which accounted for the second highest percentage of the patients with 21%. Lusaka province's high patient load may be due to the close proximity of patients in this province to the CDH. Apart from this, Lusaka is the most densely populated province according to demographic data of Zambia. Lusaka province has a population of 2.78 million people followed by the Copperbelt province at 2.367 million people. Northern and Muchinga provinces' population were 1.3 million and 895,000 respectively [(40)]. Northern and Muchinga provinces' which are mostly rural farming areas had the second highest incidence of HNC. This may be due to certain risk factors associated with farming such as use of farming chemicals that may be carcinogenic. Further studies may need to be done to explore the risk factors in that part of the country.Our study findings differ from the study done in Egypt, which revealed a higher incidence of HNC patients coming from urban areas [(32)].

In our study, laryngeal cancers were the most common HNC cancer accounting for 25.5% followed by nasopharyngeal carcinoma at 18%. Thyroid gland cancer was the least prevalent cancer at 2%. Onyango et al [(30)] in Kenya also found laryngeal cancer to be the cancer with highest incidence with 39% of the cases followed by tongue cancer with 11%. However, Gilyoma et al [(22)] in Tanzania found oral cavity cancer accounting for 37.3% of the HNC to be the most prevalent. Lily-Tariah et al [(27)] after review of 27 published articles on HNC in Nigeria found nasopharyngeal cancers to be the most common tumours followed by sino-nasal and laryngeal cancers. The differences in the prevalence of these tumours may be due to the geographical locations, social and cultural practices of the people in the region.

Laryngeal and hypopharyngeal cancers were both more prevalent in males than females. The ratio of males to females however with laryngeal cancer was very narrow at 1.08:1.Laryngeal cancer is primarily a male disease with a male to female ratio that ranges from 30:1 to 5:1 worldwide [(42)]. The high prevalence of laryngeal cancer and tobacco smoking may be due to the increase in tobacco smoking and alcohol consumption in females. Apart from this the widespread consumption of smoked food in Zambia, may be the cause of the high prevalence of these tumours.

Smoked food has been documented to have carcinogenic elements [3,4,8]. In our study, the short duration of the study would have resulted in capturing more females with the disease. However, more research is needed in this area.

Our study found squamous cell carcinoma to be the most common histology of HNC with more than 86.7%. Squamous cell carcinoma is the prevalent histology worldwide according to literature and this result is in conformity with world data [6,7]. This is mainly because squamous epithelium lines of upper aerodigestive tract from which most of these head and neck cancers arise. However, in Nigeria, Amusa et al [43] found lymphoma as the most common histopathological diagnosis of HNC in children and squamous cellcarcinoma was the common histopathological diagnosis in adults. Adenoid cystic carcinoma was the most common salivary gland histology in our study with 6 (6.1%) patients. This finding is different from other studies which show the commonest histopathology of the salivary gland to be mucoepidermoid carcinoma [44, 45]. This difference may be attributed to the timing of the study and convenience sampling method. Therefore, other patients with different salivary gland tumours were not captured. Anaplastic histology was seen in 2% of the patients both of whom had Thyroid cancer. Thyroid cancers were only present in patients more than 50 years old and both patients presented with stage IVdisease.

Most of the patients in our study presented to the CDH with late-stage disease. There were more than74% ofpatients with stage III and stage IV disease and only 6%and 18% presented with stage I andstageII disease respectively. The majority of the patients who presented with stage IV disease comprised patients with tumors in their nasopharynx. Stage I disease was mostly observed in patients who had tumours in the larynx. These results are similar to studies performed in India where patients with laryngeal HNSCC presented with early-stage disease to the hospital [46]. Early presentation of patients with laryngeal cancer may be due to the fact that symptoms associated with tumour in this site such as change in voice may prompt one to seek medical attention quickly.

Late presentation of patients to the hospital can be attributed to a number of reasons. Onyango et al [47] in Kenya in his study attributed the late presentation of HNC to delay in the patient referral system rather than patient compliance. In another study in Kenya, Oburra[48]found that patients presenting to the national hospital with laryngeal and nasopharyngeal cancer had an 8.7 month

delay from the first visit at the primary health care facility for medical treatment to the first appointment at the national hospital.In Zambia, the challenged ear, nose and throat services experienced, coupled with deficits of trained health care personnel, infrastructure and equipment in hospitals at most levels of health care, may lead to the late diagnosis of HNC.These may lead to late referral to large facilities for treatment [49, 50] and compounded by the fact that most of the patients are mostly coming from rural areas, are subsistence farmers with low level of education attained may reflect their socioeconomic status. Lastly the current COVID -19 Pandemic may discourage people from visiting hospitals for treatment and therefore, also contribute to the late presentation of the patients to hospital. Furthermore, late presentation of the patients with HNC translates into poor prognosis.

5.2 Conclusion

The study provides baseline information on the epidemiological and clinico-histopathological characteristics of the head and neck cancers in Zambia. HNC patients present to the CDH from all the provinces of the country of Zambia with more than a 2/3 of the patient load coming from Lusaka, Northern and Muchinga provinces with late-stage disease. The largest proportions of patients are in their 4^{th} decade of life. The majority of tumours seen are in the larynx followed by the nasopharynx with squamous cell carcinoma as the most common histological diagnosis.

5.3 Limitation

The major limitation of our study was time constraint which hindered us from including more patients in this study to represent the national population.

5.4 Recommendations

It is recommended that more cancer treatment centres need to be established in Zambia so as to decentralize the treatment of HNC to provincial capital cities across the country. At a bare minimum, a cancer treatment centre ought to be established in the Northern zone of the country to absorb the patients coming from the provinces in that region.

A follow-up study is required to ascertain why patients present late for treatment and monitor the trends of HNC across the country. To this effect, prospective population-based studies are required to determine the national incidence and risk factors for HNC.

More medical personnel trained in the field of Ear, Nose and Throat- Head and Neck Surgery are required in the various regions across the country for patients to be diagnosed and referred early for treatment. Public campaigns to sensitize the general public on the HNC symptoms are also required. Lastly, we recommend an ENT, Head and Neck Surgeon to evaluate all the patients presenting to the hospital for treatment.

REFERENCES

1. Fanucchi M, Khuri FR, Shin D, et al. Update in the management of head and neck cancer. Update on Cancer Therapeutics. 2006; 1(2):211–219.
2. Torre LA, Bray F, Siegel RL, et al. Global cancer statistics, 2012. CA: A Cancer Journal for Clinicians. 2015Apr; 65(2):87–108.
3. Nwawolo CC, Ajekigbe AT, Oyeneyin JO, et al. Pattern of head and neck cancers among Nigerians in Lagos. West African Journal of Medicine. 2001Apr; 20(2):111–116.
4. Head and neck cancer. Union for International Cancer Control. 2014 Review of Cancer Medicines on the WHO List of Essential Medicines.
5. Argiris A, Karamouzis MV, Raben D, et al. Head and neck cancer. The Lancet. 2008; 371(9625):1695–1709.
6. Jemal A, Siegel R, Ward E, et al. Cancer Statistics, 2008. CA: A Cancer Journal for Clinicians. 2008;58(2):71–96.
7. Boyle P, Levin B. World cancer report 2008. Lyon: IARC Press; 2008.
8. Stenson K. Epidemiology and risk factors for head and neck cancer [Internet]. UpToDate. 2016 [cited 2019Jun14]. Available from: https://www.uptodate.com/contents/epidemiology-and-risk-factors-for-head-and-neck-cancer
9. Hoffmeyer-Zlotnik JHP. Standardisation and Harmonisation of Socio-Demographic Variables. Manheim, Germany: GESIS Survey Guidelines; 2016.
10. Iseh KR, Essien E, S. Bilbis L. Demographic Characteristics and Food Consumption Pattern of Head and Neck Cancer Patients in a Tertiary Health Institution North West Nigeria. Pakistan Journal of Nutrition. 2013;12(10):897-902.
11. Menvielle G, Luce D, Geoffroy-Perez B, et al. Social inequalities and cancer mortality in France, 1975–1990. Cancer Causes & Control. 2005;16(5):501–513.
12. Sturgis EM, Wei Q, Spitz MR. Descriptive epidemiology and risk factors for head and neck cancer. Seminars in Oncology. 2004;31(6):726–733.
13. Steenland K, Hu S, Walker J. All-Cause and Cause-Specific Mortality by Socioeconomic Status Among Employed Persons in 27 US States, 1984–1997. American Journal of Public Health. 2004;94(6):1037–1042.

14. Pai SI, Westra WH. Molecular Pathology of Head and Neck Cancer: Implications for Diagnosis, Prognosis, and Treatment. Annual Review of Pathology: Mechanisms of Disease. 2009;4(1):49–70.
15. Gartner LP, Hiatt JL. Chapter 16: Palate, Pharynx and Larynx. In: Textbook of Head and Neck Anatomy. 4th ed. Lippincott Williams & Wilkins; 2010. p. 243–253.
16. Barnes L, EvesonJW, Reichart P, et al. WHO histological classification of tumours of the nasal cavity and paranasal sinuses. In: Pathology and Genetics of Head and Neck Tumours. Lyon: IARC Press; 2005. p. 10.
17. Ologe F, Adeniji K, Segun-Busari S. Clinicopathological study of head and neck cancers in Ilorin, Nigeria. Tropical Doctor. 2005;35(1):2-4.
18. El-Naggar A, Chan J, Grandis J, et al. WHO classification of head and neck tumours.
19. Madani AH, Dikshit M, Bhaduri D,et al. Relationship between Selected Socio-Demographic Factors and Cancer of Oral Cavity - A Case Control Study. Cancer Informatics. 2010;9.
20. Davies L, Welch HG. Epidemiology of head and neck cancer in the United States. Otolaryngology–Head and Neck Surgery. 2006;135(3):451–457.
21. Mehanna H, Paleri V, West CML, Nutting C. Head and neck cancer--Part 1: Epidemiology, presentation, and prevention. Bmj. 2010;341(sep20 1):c4684–c4684.
22. Gilyoma JM, Rambau PF, Masalu N, et al. Head and neck cancers: a clinico-pathological profile and management challenges in a resource-limited setting. BMC Research Notes. 2015;8(1).
23. Alam M, Siddiqui S, Perween R. Epidemiological profile of head and neck cancer patients in Western Uttar Pradesh and analysis of distributions of risk factors in relation to site of tumor. Journal of Cancer Research and Therapeutics. 2017;13:403-405
24. Ganesh R, John J, Saravanan S. Socio demographic profile of oral cancer patients residing in Tamil Nadu - A hospital based study. Indian Journal of Cancer. 2013;50(1):9.
25. Amin MB, Edge SB, Greene FL, et al (eds). AJCC Cancer Staging Manual, 8thed. New York: Springer; 2017
26. Lydiatt WM, Patel SG, Osullivan B, et al. Head and neck cancers-major changes in the American Joint Committee on cancer eighth edition cancer staging manual. CA: A Cancer Journal for Clinicians. 2017;67(2):122–137.

27. Lilly-TariahOBD, Somefun AO, Adeyemo WL. Current evidence on the burden of head and neck cancers in Nigeria. Head & Neck Oncology. 2009;1(1).
28. Zyaambo C, Nzala SH, Olusegun B, et al. Distribution of cancers in Zambia: Evidence from the Zambia National Cancer Registry (1990–2009). Journal of Public Health and Epidemiology. 2013Feb;5(2):95-100.
29. Gathere S, Mutuma G, Korir A, et al. Head and neck cancer four year trend at the Nairobi cancer hospital. African Journal of Health Sciences. 2011;19:33-39.
30. Onyango J, Awange D, Njiru A, et al. Pattern of occurrence of head and neck cancer presenting at Kenyatta National Hospital, Nairobi. East African Medical Journal. 2006Dec;83(5).
31. Nabukenya J, Hadlock TA, Arubaku W. Head and Neck Squamous Cell Carcinoma in Western Uganda: Disease of Uncertainty and Poor Prognosis. OTO Open. 2018;2(1).
32. Attar E, Dey S, Hablas A, et al. Head and neck cancer in a developing country: A population-based perspective across 8years. Oral Oncology. 2010;46(8):591–595.
33. Mallick DSK. Clinico-Social Profile of Patients with Head and Neck Cancers Attending Radiotherapy OPD: An Indian Perspective. Journal of Medical Science And Clinical Research. 2017Apr;05(04):19813–19819.
34. Stoyanov GS, Kitanova M, Dzhenkov DL, et al. Demographics of Head and Neck Cancer Patients: A Single Institution Experience. Cureus. 2017Feb;
35. Busquets JM, Garcia HA, Pinedo JT, et al. Clinicopathological characteristics of head and neck squamous cell carcinoma in Puerto Ricans. Puerto Rican Health Sciences Journal. 2003;22(3):259–264
36. Wilson A, Holewa H, Mcgrath P. Who are our patients?' A socio-demographic profile of head and neck cancer patients. Austral-Asian journal of cancer. 2010;10.
37. Vartanian JG, Carvalho AL, Toyota J, et al. Socioeconomic Effects of and Risk Factors for Disability in Long-term Survivors of Head and Neck Cancer. Archives of Otolaryngology–Head & Neck Surgery. 2006Jan;132(1):32.
38. Daniel W, Cross C. Biostatistics: A Foundation for Analysis in the Health Sciences. 10th ed. New York: John Wiley & Sons; 2013.
39. International Agency for Research on Cancer. The Global Cancer Observatory. Geneva: World Health Organisation; 2021.

40. Zambia Central Statistics Office, "Population and Demographic Projections, 2011-2035-Zambia Data Portal," 2013, March, 2021, http://zambia.opendataforafrica.org/ZMPHC2015/population-and-demographic-projections-2011-2035?country=1000000-zambia
41. Lee K, Strauss M. Head and neck cancer in black. J Natl Med Assoc.1994Jul;86(7):530-4. PMID:8064904;PMCID:PMCD:PMC2607604
42. Markou K, Christoforidou A, Karasmanis I, et al. Laryngeal cancer: epidemiological data from Northern Greece and review of the literature. *Hippokratia*. 2013;17(4):313-318.
43. Amusa YB, Olabanji JK, Akinpelu VO, et al. Pattern of head and neck malignant tumours in a Nigerian teaching hospital – A ten year review. West Afr J Med. 2004;23:280–285
44. Tshering P, Dorjee S, Dendup T, et al. Epidemiological and histopathological characteristics of head and neck cancers in Bhutan from 2011 to 2017: a retrospective descriptive study. Ecancermedicalscience. 2020;14:1024. Published 2020 Apr 15.
45. Tangjaturonrasme N, Vatanasapt P, Bychkov A. Epidemiology of head and neck cancer in Thailand. Asia Pac J Clin Oncol. 2017. pp. 1–7.
46. Sharma M, Madan M, Manjarin M, et al. Prevalence of head and neck squamous cell carcinoma (HNSCC) in our population: the clinico-pathological and morphological description of 198 cases Int J Adv Res (Indore). 2015;3:827-833
47. Onyango JF, Macharia IM. Delays in diagnosis, referral and management of head and neck cancer presenting at Kenyatta National Hospital, Nairobi. East Afr Med J. 2006 Apr;83(4):85-91.
48. Oburra H.O, Late presentation of laryngeal and nasopharyngeal cancer at Kenyatta National Hospital. Esat Afr.Med.J.1998;75:223-226
49. Lukama L, Kalinda C. & Aldous C. Africa's challenged ENT services: highlighting challenges in Zambia. BMC Health Serv Res 19, 443 (2019).
50. Lukama L, Kalinda C, Kuhn W, Aldous C. Availability of ENT Surgical Procedures and Medication in Low-Income Nation Hospitals: Cause for Concern in Zambia. Biomed Res Int. 2020 Mar 20;2020:1980123

APPENDICES

Appendix I: Time-Frame

	July 2019	**Sept-Nov 2019**	**Dec-Jan 2020**	**Feb 2020**	**Mar-May 2020**	**June-July 2020**	**Aug 2020**	**Sept-Dec 2020**	**Jan 2021**	**Feb 2021**
Proposal presentation										
Submit proposal to KNH/ UoN Ethics										
Submit proposal to UNZABREC										
UNZABREC review and approval										
Data collection										
Data analysis										
Presentation of Results										
Writing final dissertation.										
Presentation of dissertation										
Publication of results										

Appendix II: Budget

The estimated budget for the whole study was as follows:

ITEM	**QUANTITY**	**UNIT PRICE (Kshs.)**	**TOTAL COST (Kshs.)**
Printing services		**10 per page**	**5400**
Stationary(Pens, markers, envelopes)		**1000**	**1000**
Transport and Logistics (air ticket)	1 Return Ticket to Lusaka	**100000**	**100000**
Airtime		**2000**	**2000**
Data entry clerk	1	**5000**	**5000**
Statistician fee	1	**35000**	**35000**
Photocopying services			**10000**
Binding services		**500**	**5000**
Publishing fee		**45000**	**45000**
Total cost			**208, 400**

The Principal Investigator catered to the cost of the study from her savings.

Appendix III(a): Consent Explanation

Study number:……

Study Title: PATTERNS OF HEAD AND NECK CANCERS AS SEEN AT THE CANCER DISEASES HOSPITAL IN LUSAKA, ZAMBIA

Principle Investigator: Dr.Uhenya Chumba (Postgraduate student in Ear, Nose and Throat surgery, University of Nairobi)

Supervisors: Dr. Peter Mugwe

Dr. Samuel Nyagah

INTRODUCTION

I would like to tell you about a study being conducted by the above-named investigator. The purpose of this consent form is to give you the information you will need to help you decide whether to be a participant in the study. Feel free to ask any questions about the purpose of the research, what happens if you participate in the study, the possible risks and benefits, your rights as a volunteer, and anything else about the research or this form that is not clear. When all your questions have been answered to your satisfaction, you may decide to be in the study or not. This process is called 'informed consent'. Once you understand and agree to be in the study, I will request you to sign your name on this form. You should understand the general principles which apply to all participants in medical research:

i. Your decision to participate is entirely voluntary
ii. You may withdraw from the study at any time without necessarily giving a reason for your withdrawal
iii. Refusal to participate in the research will not affect the services you are entitled to in this health facility or other facilities. We will give you a copy of this form for your reference.

May I continue? YES / NO

This study has approval by The Kenyatta National Hospital-University of Nairobi Ethics and Research Committee protocol No. _____ and the University of Zambia Biomedical Research Ethics Committee (UNZABREC).

STUDY BACKGROUND

Head and neck cancers are a growing burden of cancer throughout the world. Socio-demographic variables are risk factors for these cancers and affect the stage at which the patients present for treatment, most presenting with late stage disease. Clinically, the areas in the head and neck from which the cancers arise include the nose, nasal cavity, paranasal sinuses, pharynx, larynx, minor and major salivary glands with the most common histopathological diagnosis being squamous cell carcinoma among many others.

BROAD OBJECTIVE

The purpose of this interview is to find out the patterns of head and neck cancers at the Cancer Diseases Hospital, in Lusaka, Zambia.

STUDY PROCEDURE

If you agree to participate in this study, I will conduct the interview in a private area where you feel comfortable answering questions. It will last approximately 20 minutes. The interview will cover topics such as your socio- demographics and socio-economic history, your smoking an alcohol history. Your medical records regarding your disease will also be assessed.

I will ask for your telephone number so that I can contact you if necessary. Your contact information will be used only by people working for this study and will never be shared with anyone else. I may need to contact you to disseminate the results.

STUDY RISKS, HARM OR DISCOMFORT

There is no direct risk associated with this study.

STUDY BENEFITS

The study will not cost you any money. The data obtained will add to the knowledge and local data on the burden of Head and Neck cancers.

STUDY COST AND REFUND

You will not incur any costs when you participate in the study. There will be no monetary benefits for participating in the study.

RIGHT TO WITHDRAW

Your decision to participate in this research is voluntary. You are free to decline participation in the study and you can withdraw from the study at any time without injustice or loss of any benefits.

CONSENT FORM (STATEMENT OF CONSENT)

Participant's statement

I have read or had the information read to me in this consent form. I have had the chance to discuss this research study with a study counselor. I have had my questions answered in a language that I understand. The risks and benefits have been explained to me. I understand that my participation in this study is voluntary and that I may choose to withdraw at any time. I freely agree to participate in this research study.

I understand that all efforts will be made to keep information regarding my identity confidential.

By signing this consent form, I have not given up any of the legal rights that I have as a participant in a research study.

I agree to participate in this research study: Yes/No

Participant printed name: _____

Participant's signature / Thumb stamp: _____

Date: _____

Researcher's statement

I, the undersigned, have fully explained the relevant details of this research study to the participant named above and believe that the participant has understood and has willingly and freely given his/her consent.

Researcher's Name: _____

Date: _____ **Signature**: _____

Role in the study: _____ [i.e. study staff who explained informed consent form.]

For more information contact_____ at _____ from_____ to _____.

Witness Printed Name (If witness is necessary for illiterate participants. A witness is a person mutually acceptable to both the researcher and participant)

Name _____

Contact information _____

Signature /Thumb stamp: _____

Date: _____

For more information about your rights as a research participant, you may contact:

The Secretary/Chairperson,

Kenyatta National Hospital-University of Nairobi Ethics and Research Committee

Telephone No. 2726300 Ext. 44102

Email uonknh_erc@uonbi.ac.ke.

Principal investigator:

Dr.Uhenya Chumba

ENT-Head and neck surgery

Department of surgery

School of Medicine, UON

P.O. Box 70128-00400 Nairobi

Mobile number: 0790915762

Email: uhenyachumba@gmail.com

Supervisors:

Dr. Peter Mugwe

MBChB., M. Med (ENT)

Consultant ENT, Head and Neck Surgeon,

Senior Lecturer,

Department of Surgery

University of Nairobi

P.O. Box 29773-00202 Nairobi

Mobile number: 0722513778

Dr. Samuel Nyagah

MBChB., M. Med (ENT),

Consultant ENT, Head and Neck Surgeon,

Kenyatta National Hospital

P.O Box 20723-00202 Nairobi

Mobile number: 0721424408

Dr. Rachael Hapunda-Chibanga
MBChB, M. Med (ENT),
Consultant ENT Head and Neck Surgeon
Department of Surgery
School of Medicine,
University of Zambia
Mobile Number: +260 96 5235227
Email: karanda2007@gmail.com

The Chairperson
University of Zambia Biomedical Research Ethics Committee,
Ridgeway Campus, Nationalist Road
P.O. Box 50110, Lusaka, Zambia
+2600211-256067
unzarec@unza.zm

Appendix III(b):Parental Consent

Title: Patterns of Head and Neck Cancers as seen in the Cancer Diseases Hospital in Lusaka Zambia.

Principle Investigator: Dr.Uhenya Chumba (Postgraduate student in Ear, Nose and Throat surgery, University of Nairobi)

Supervisors: Dr. Peter Mugwe

Dr. Samuel Nyagah

Dr. Rachael Hapunda- Chibanga

I would like to tell you about a study being conducted by the above listed researchers. The purpose of this consent form is to give you the information you will need to help you decide whether or not your child should participate in the study. Feel free to ask any questions about the purpose of the research, what happens if your child participates in the study, the possible risks and benefits, the rights of your child as a volunteer, and anything else about the research or this form that is not clear. When we have answered all your questions to your satisfaction, you may decide if you want your child to be in the study or not. This process is called 'informed consent'. Once you understand and agree for your child to be in the study, I will request you to sign your name on this form. You should understand the general principles which apply to all participants in a medical research: i) Your child decision to participate is entirely voluntary ii) You child may withdraw from the study at any time without necessarily giving a reason for his/her withdrawal iii) Refusal to participate in the research will not affect the services your child is entitled to in this health facility or other facilities. May I continue? YES / NO.

We will go over this information with you and you need to give permission in order for your child to participate in this study. We will give you a copy of this form for your records. Please know that once you give informed consent, your child too will be explained to as well what is intended and the too will fill an assent form to agree to be part of the study. We are asking for your consent to consider your child to participate in this study. This is a study that wants to find out the patterns of head and Neck cancers in the patients who present to the Cancer Diseases Hospital in Lusaka.

WHAT WILL HAPPEN IF YOU DECIDE YOU WANT YOUR CHILD TO BE IN THIS RESEARCH STUDY? If you agree for your child to participate in this study, the following things will happen: You will be interviewed by the principal investigator in a private area where you feel comfortable answering questions. The interview will last approximately 20 minutes. The interview

will cover topics such as where you are coming from, your socio- economic status, where the cancer is located and your medical records as related to the cancer will be assessed. After the interview has finished, the principal investigator will ask for a telephone number where we can contact you if necessary. If you agree to provide your contact information, it will be used only by people working for this study and will never be shared with others. I may need to contact you to disseminate the results.

STUDY RISKS, HARM OR DISCOMFORT

There is no direct risk associated with this study.

STUDY BENEFITS

The study will not cost you any money. The data obtained will add to the knowledge and local data on the burden of Head and Neck cancers.

STUDY COST AND REFUND

You will not incur any costs when you participate in the study. There will be no monetary benefits for participating in the study.

RIGHT TO WITHDRAW

Your decision to have your child participate in this research is voluntary. You are free to decline or withdraw participation of your child in the study at any time without injustice or loss of benefits. Just inform the study staff and the participation of your child in the study will be stopped. You do not have to give reasons for withdrawing your child if you do not wish to do so. Withdrawal of your child from the study will not affect the services your child is otherwise entitled to in this health facility or other health facilities

We will keep everything you tell us as confidential as possible. We will use a code number to identify your child in a password-protected computer database and will keep all of our paper records in a locked file cabinet. However, no system of protecting confidentiality can be absolutely secure so it is still possible that someone could find out your child was in this study and could find out information about your child. Also, answering questions in the interview may be uncomfortable for you. If there are any questions you do not want to answer, you can skip them. You have the right to refuse the interview or any questions asked during the interview. We will do everything we can to ensure that this is done in private

If you have further questions or concerns about your child participating in this study, please call or send a text message to the study staff at the number provided at the bottom of this page. For

more information about your child's rights as a research participant you may contact the Secretary/Chairperson, Kenyatta National Hospital-University of Nairobi Ethics and Research Committe and the University of Zambia Biomedical Research Ethics Committee (UNZABREC). The study staff will pay you back for your charges to these numbers if the call is for study-related communication.

Your decision to have your child participate in this research is voluntary. You are free to decline or withdraw participation of your child in the study at any time without injustice or loss of benefits. Just inform the study staff and the participation of your child in the study will be stopped. You do not have to give reasons for withdrawing your child if you do not wish to do so. Withdrawal of your child from the study will not affect the services your child is otherwise entitled to in this health facility or other health facilities.

The person being considered for this study is unable to consent for him/herself because he or she is a minor (a person less than 18 years of age). You are being asked to give your permission to include your child in this study.

Parent/guardian statement: I have read this consent form or had the information read to me. I have had the chance to discuss this research study with a study counselor. I have had my questions answered by him or her in a language that I understand. The risks and benefits have been explained to me. I understand that I will be given a copy of this consent form after signing it. I understand that my participation and that of my child in this study is voluntary and that I may choose to withdraw it any time. I understand that all efforts will be made to keep information regarding me and my child's personal identity confidential. By signing this consent form, I have not given up my child's legal rights as a participant in this research study. I voluntarily agree to my child's participation in this research study:

Parent/Guardian signature /Thumb stamp: _____ Date _____

Parent/Guardian printed name: _____

I, the undersigned, have fully explained the relevant details of this research study to the participant named above and believe that the participant has understood and has knowingly given his/her consent. Printed

Name: _____

Date: _____

Signature: _____

Witness Printed Name _____

Signature: _____ Date; _____

Appendix IV: Assent Form

Title: Patterns of Head and Neck Cancers as seen in the Cancer Diseases Hospital in Lusaka Zambia.

My name is Dr.Uhenya Chumba. I am a resident doctor in the ENT, Head and Neck Surgical Unit at KNH. I am also a student conducting a research study. Permission has been granted to undertake this study by the Kenyatta National Hospital-University of Nairobi Ethics and Research Committee (KNH-UoN ERC Protocol No. _____) and the University of Zambia Biomedical Research Ethics Committee (UNZABREC).

A research study is when doctors collect a lot of information to learn more about something. I am trying to learn more about the different cancers in our country that affect the head and neck regions of the body. There will be at least 63 other people both children and adults participating in this study.

If you agree to be part of the study, your parent/ guardian will be asked information about you. This information obtained about you will help gather information about where people with these diseases are coming from and which part in the head and neck region is affected.

You can ask questions any time. You can ask now. You can ask later. You can talk to me or you can talk to someone else.

If you don't want to be in the study, you don't have to be in it. Remember being in this study is up to you and no one will be upset if you don't want to be in the study. I will also ask your parents to give permission for you to be in this study but even if your parents say "yes", you can still say "no" and decide not to be in the study.

When we are finished with this study we will write a report about what was learned. This report will not include your name or that you were in the study. You do not have to be in this study if you do not want to be. If you decide to stop after we begin, that's okay too. Your parents know about the study too.

If you decide to participate in this study, please sign your name.

I ....., want to be in this research study.

.....

(Signature / thumb stamp) (Date)

Appendix V (a): Ukulondolola Formu Yakusumininapo

Inambala ya mu masambililo: ……. …….

Icilelandwapo: IFYO CIBA KU BULWELE BWA KANSA UBWA MU MUKOSHI NA MU MUTWE NGA FINTU CASANGWA PA CIPATALA CA KANSA ICA MU LUSAKA MU ZAMBIA

Kafwailisha Umukalamba: Dokota Uhenya Chumba (Uusambilila pa matwi, Imyona na ukulepula mu mikolomino, Yuniversiti ya ku Nairobi)

Bakapitawa: Dokota. Peter Mugwe

Dokota. Samuel Nyagah

Dokota. Rachael Hapunda

AMASHIWI YA NTANSHI

Kuti natemwa ukumwebako pa masambililo ayaletungululwa na kafwailisha mukalamba uulumbwilwe pa muulu. Imifwaile ya iyi formu iya kusumininapo kufwaya ukuti mwishibe ifyebo ifyakumwafwa ukupingulapo nga mulefwaya ukuba mu masambililo. Tamulingile ukumfwa umwenso ukwipusha amepusho pa co kubeleele uku ukufwailisha, cikaba shani nga mwaba muli aya amasambililo, ubwafya ubwingabako e lyo no busuma ubwingabamo, insambu shenu pamo nga umuntu uuipeleeshe, nangu fye fimbi pa lwa uku ukufwailisha ngangu ifishumfwikike pali iyi formu. Amapesho yenu yonse nga yayasukwa kabili nga mwatemwa, kuti mwapingulapo ukuba mu masambililo nangu ukukanabamo. Ifi e fyo tuleita ukuti 'ukusuminishako mukuitemenwa'. Nga mwaumfwikisha kabili nga mwasumina ukuba mu masambililo, nkamulomba ukulemba ishina lyenu no kusaina pali iyi formu. Mulingile ukumfwikisha ifishinka fyonse ifibomba kuli bonse ababa mu kufwailisha kwa fya cipatala:

iv. Ukupingulapo ukuba muli aya amasambililo kuitemenwa fye mwe bene
v. Kuti mwaleka aya amasambililo inshita fye iili yonse ukwabula ukulanda ico mwalekela
vi. Nga mwakana ukuba muli uku ukufwailisha tacilepilibula ukuti tamwakaleundapwa ukulingana na fintu mulingile ukundapwa pali cino cipatala nangu ku cipatala cimbi. Tukamupeelako kope ya ino form pa kuti mukaleibomfya.

Bushe kuti natwalilila? EE /IYO

Abasuminisha aya amasambililo ni ba Kenyatta National Hospital-University iya ku Nairobi Ethics na ba Research Committee protocol Na. _____ e lyo na ba University of Zambia Biomedical Research Ethics Committee (UNZABREC).

IFILI MU MASAMBILILO

Kansa ya mu mutwe na mu mukoshi iile ilefulilako mu calo conse. Ukusambilila pali ubu ubulwele mu bantu abalekanalekana bwafya ubukalamba sana, abengi baya ku cipatala ninshi ubulwele nabufika mu namankati. Ilingil line kansa ya mu mukoshi na mu mutwe, ilaba na mu moona, mu fibumbili fya myona, mu mpito sha myona, mu kalikolilo, mu mukolomino, mu mibangobango, e lyo na mu ncende na shimbi umwalundanina umutwe no mukoshi.

ICILEFWAIKWA ICIKALAMBA

Ico kubelele uku ukufwailisha pa Bulwele bwa Kansa pa Cipatala ca Kansa mu Lusaka mu Zambia, kufwaya ukwishiba ifyo ubulwele bwa kansa ubwa mu mukoshi no mutwe buba.

IFYO AMSAMBILILO YAKULABA

Nga mwasumina ukuba muli aya amasambililo, ndi no kumwipusha ifipusho ku ncende uko tukaba fye babili uko mwingayumfwa abantungwa ukwasuka ifipusho. Tukapoosa fye amamineti 20. Ifyo inkamwipushapo ni ifi: imikukulile yenu, imikalile yenu mu fya bunonshi, pa lwa kupeepa fwaka no kunwa ubwalwa. Kukaba no kumona ama rekodi yenu pa malwele mwalwalapo.

Inkafwayako na inamba ya foni yenu pa kuti ningamutumina nga cafwaikwa. Ifyebo fyenu ifyakumwishibilako fikabomfiwa fye na bantu abalebomba muli aya amasambililo, takwakabe ukulangako bambi iyo. Kuti limbi namutumina foni pa kuti ningamweba ifyo twasanga.

AMAFYA AYENGABAKO MULI AYA AMASAMBILILO

Takwaba ubwafya ubwaishibikwa bwino ubwaba muli aya amasambililo.

UBUSUMA BWABAMO

Tamwakaposepo indalama pali aya amasambililo. Ifyebo ifikasangwa fikalenga tukeshibileko ifintu ne fyebo na fimbi pa bulwele bwa kansa ya mu mukoshi na mu mutwe.

INDALAMA SHIKAPOOSWAPO NO KUBWESESHAPO

Tamwakaposepo indalama nangu imo pali aya amasambililo kabili tamwakafolelepo pa kuba muli aya amasambililo.

NAMUKWATA INSAMBU YA KULEKA

Ukuba muli uku ukufwailisha kuitemenwa mwe bene. Nga mulefwaya kuti mwakana ukubamo kabili lyonse ilyo mulefwaya ukuleka, kuti mwaleka ukwabula ubwafya nangu ukupuswako ku fisuma ifya muli aya amasambililo.

FORMU YAKUSUMININAPO (AMASHIWI YA KUSUMINA)

Amashiwi ya uuli mu masambililo

Nimbelengela nangu ntile, nabambelengela ifyebo fya muli formu yakusumininapo. Nalikwete ishuko lya kulanshanya ifyebo fya muli aya amasambililo ya kufwailisha ne mpandamano ya muli aya masambililo. Ifipusho fyandi fyalyasukwa mu lulimi ulo ing'umfwa. Amafya no busuma ifyabamo nabanondolwela. Ni ng'umfwikisha ukuti ukuba muli aya amasambililo kuitemenwa fye no kuti nga ndefwaya kuti naleka inshita iili fye yonse. Ni nsumina ukuba mu masambililo ukwabula ukumpatikisha.

Ninjishiba ukuti kuli ukubombesha ukwakusunga inkaama pa fyebo ifya kunjishibilako.

Ifi na saina iyi formu no kuba muli aya masambililo tacilepilibula ukuti ne nsambu shandi shonse ishe funde nalekamo iyo.

Ninsumina ukuba muli aya amasambililo ya kufwailisha: Ee/Iyo

Ishina lya uli mu masambililo: _____

Signeca ya uli mu masambililo / Icifwati: _____

Ubushiku: _____

Ifyebo fya kwa kafwailisha

Ine, ne usaine pe samba, ninondolwela umuntu uwe shina ilili pa muulu uuli muli aya amasambililo ifyebo fyonse ifilefwaikwa ifya muli aya masambililo ya kufwailisha kabili ninjishiba ukuti naumfwa fyone kabili umwine naitemenwa ukubamo kabili nasumina.

Ishina lya kwa kafwailisha: _____

Ubushiku: _____ **Signeca**: _____

Icufulo ca mu masambililo: _____ [i.e. umubomfi wa mu masambililo uwalondolwele formu yakusumininapo.]

Nga mulefwaya ukumfwilapo na fimbi moneni_____ pa _____ ukufuma_____ **ku** _____.

Ishina lya kwa kambone (Kambone nga alefwaikwa ku uuli mu masambililo uushibelenga. Kabombe alingile ukuba muntu uo bonse kafwailisha no musambi basuminishe ukubapo)

Ishina _____

Ifyebo fyakumumwenapo _____

Signeca /Icifwati: _____

Ubushiku: _____

Nga mulefwaya ifyebo na fimbi pa lwa nsambu shenu pamo nga uuli muli aya amasambililo, kuti mwamona:

Sekritare/Ceyamani,

Kenyatta National Hospital-University of Nairobi Ethics and Research Committee

Telephone No. 2726300 Ext. 44102

Email uonknh_erc@uonbi.ac.ke.

Kafwailisha umukalamba:

Dr.Uhenya Chumba

ENT-Head and neck surgery

Department of surgery

School of Medicine, UON

P.O. Box 70128-00400 Nairobi

Mobile number: 0790915762

Email: uhenyachumba@gmail.com

Bakapitawa:

Dokota. Peter Mugwe

MBChB., M. Med (ENT)

Consultant ENT, Head and Neck Surgeon,

Senior Lecturer,

Departmenti ya Kulepula

Yuniversite ya ku Nairobi

P.O. Box 29773-00202 Nairobi

Foni: 0722513778

Dokota. Samuel Nyagah
MBChB., M. Med (ENT),
Consultant ENT, Head and Neck Surgeon,
Kenyatta National Hospital
P.O Box 20723-00202 Nairobi
Foni: 0721424408

Dr. Rachael Hapunda-Chibanga
MBChB, M. Med (ENT),
Consultant ENT Head and Neck Surgeon
Department of Surgery
School of Medicine,
University of Zambia
Mobile Number: +260 96 5235227
Email: karanda2007@gmail.com

Cheyapersoni
University of Zambia Biomedical Research Ethics Committee,
Ridgeway Campus, Nationalist Road
P.O. Box 50110, Lusaka, Zambia
+2600211-256067
unzarec@unza.zm

Appendix V(b): Ukusuminisha Kwa Bafyashi

Icilelandwapo: Ifyo ciba ku bulwele bwa kansa ubwa mu mukoshi na mu mutwe nga fintu casangwa pa cipatala ca kansa ica mu Lusaka mu Zambia.

Kafwailisha mukalamba: Dr. Uhenya Chumba (uusambilila pa matwi, imyoona na ukulepula mu mukolomino, University of Nairobi)

Bakapitawa: Dr. Peter Mugwe

Dr. Samuel Nyagah

Kuti natemwa ukumwebako pa masambililo ayalecitwa na bakafwailisha abalumbwilwe pa muulu. Imifwaile ya iyi formu yakusumininapo kufwaya ukuti mukwate ifyebo ifyakumwafwa ukupingulapo nampo nga umwana wenu alingile ukuba mu masambililo nangu iyo. Yumfweni abantungwa ukwipusha ifipusho pa co kubeleele aya amasambililo, cikaba shani umwana wenu nga aba mu masambililo, amafya no busuma ifingabamo, insambu sha mwana wenu pamo nga uwakuipeela, nangu fye fimbi pa lwa uku ukufwailisha nangu ifishumfwikike pali iyi formu. Nga twayasuka amepusho yenu yonse ukulingana ne fyo mwingafwaya, kuti mwapingulapo nga mwingafwaya umwana wenu ukuba mu masambililo nangu iyo. Ifi twalandapo e fyo tuleita kuti 'ukusuminishako'. Nga mwaumfwa kabili nga mwasumina ukuti umwana wenu akabe mu masambililo, nkamweba ukuti mukalembe ishina no kusaina pali iyi formu. Mulingile ukwishiba ifishinka ifibomba kuli bonse abaaba mu kufwailisha pa fya cipatala i) Umwana wenu ukuba muli uku ukufwailisha kuitemenwa fye ii) Umwana wenu kuti afumamo mu masambililo inshita fye iili yonse ukwabula no kulanda ico alekela iii) Nga tamulefwaya ukuti umwana wenu akabe mu masambililo, tacilepilibula ukuti takaletangaatwa kulingana ne fyo alingile ukutangaatwa pali cino icifulo nangu ku fifulo fimbi. Bushe kuti natwalilila? EE/ IYO.

Tuli no kupitulukamo capamo nenu kabili mulingile ukupeela insambu pa kuti umwana wenu engaba muli aya amasambililo. Tukamupelako kope ya iyi formu pa kuti mukasunge. Mukwai mulingile ukwishiba ukuti nga mwasuminisha fye, umwana wenu bali no kumulondolwela ifyo cili no kuba, nao akalemba iyi formu iya kusumina ukuba mu masambililo. Tulelomba ulusa kuli imwe pa kuti mwingasumina ukuti umwana wenu akabe mu masambililo. Uku kufwailisha ukwa kumona pa bulwele bwa kansa ya mu mukoshi na mu mutwe mu balwele abaya ku Cipatala ca Kansa mu Lusaka.

CIKABA SHANI NGA MWAPINGULAPO UKUTI MULEFWAYA UMWANA WENU AKABE MU MASAMBILILO YA KUFWAILISHA? Nga mwasumina ukuti umwana wenu

akabe muli aya masambililo, ifyakonkapo e fikacitika: Bakamwipusha kuli kafwailisha mukalamba mu cifulo umo mukaba fye na kafwailisha kabili umo mushingakwata ubwafya bwa kwasuka ifipusha. Bakamwipusha pa mamineti 20 fye. Bakamwipusha pa fintu pamo nga, uko mufumine, imikalile yenu iya mu bwikashi, apo kansa ili e lyo na ma rekodi yenu aya fya cipatala ifilekuma kansa kukaba ukufipitulkamo. Pa numa ya kumwipusha, kafwailisha mukalamba akamulomba ukuti akamupeele inamba ya foni iyo engamutuminapo. Nga mwasumina ukumupeela ifyebo pa lwa imwe, fikabomfiwa na bantu abalebomba muli aya amasambililo, lelo tabakafipeeleko abantu bambis. Kuti natemwa ukumwishibisha pa kuti ningamweba ifikasangwa mukufwailisha.

AMAFYA AYENGABAKO MULI AYA AMASAMBILILO

Takwaba ubwafya ubwaishibikwa bwino ubwaba muli aya amasambililo.

UBUSUMA BWABAMO

Tamwakaposepo indalama pali aya amasambililo. Ifyebo ifikasangwa fikalenga tukeshibileko ifintu ne fyebo na fimbi pa bulwele bwa kansa ya mu mukoshi na mu mutwe.

INDALAMA SHIKAPOOSWAPO NO KUBWESESHAPO

Tamwakaposepo indalama nangu imo pali aya amasambililo kabili tamwakafolelepo pa kuba muli aya amasambililo.

NAMUKWATA INSAMBU SHA KULEKA

Ukupingulapo ukuti umwana abe muli aya masambililo, kuitemenwa mwe bene. Tamulingile ukumfwa umwenso wa kufumya umwana wenu mu masambililo inshita yonse iyo mulefwaya ukwabula ukuluusa icili conse. Kuti mwaishibisha fye umubomfi wa mu masambililo nishi kuti bamufumyamo. Tamulingile ukulanda ico mwafumishamo umwana nga ca kuti tamulefwaya ukulanda umulandu. Ukufumyamo umwana wenu mu masambililo takwakapumfyanye ukutangata umwana ifyo alingile ukutangatwa pali cino icifulo nangu ku fifulo fimbi ifya kundapilapo.

Tukesha na maka yose ukusunga inkaama pa fyebo fyonse ifyo mukatweba. Tukabomfya inamba ya kwishibilako umwana wenu, ifyebo fikaba muli kompyuta iyakomwa kabili tukasunga amapepala yonse muli kabinet iyo tukalakoma. Nangu cibe fyo takwaba umusango wa mikomene uo takuli umuntu nangu umo uwingakomonona, kanshi kuti cacitika ukuti umuntu kuti aisula amona ne fyebo pa lwa muwana wenu no kuti uyu umwana alipo muli aya masambililo. Na kabili limo te kuti mutemwe ukwasuka ifipusho nga balemwipusha. Nga kwaba ifipusho ifyo mushingatemwa ukwipusha kuti mwafisha ukwabula ukufyasuka. Namukwata insambu ya

kukaana ukumwipusha nangu ukukanayasuka ifipusho fimo. Tukeesha na maka ukushininkisha ukuti bamwipushisha ukushili icinabwingi

Nga na mukwata ifipusho na fimbi nangu nga kuli ifilemusakamika pa kuba kwa mwana wenu muli aya amasambililo, mukwai kuti mwatuma foni nangu meseji ku mubomfi wa muli aya amasambililo pa nambala iili panshi ya ili ibuuala. Nga mulefwaya ifyebo na fimbi pa lwa nsambu sha mwana wenu pamo nga uuli mu masambililo ya kufwailisha kuti mwatumina ba Sekritale/Cheyapesoni, Kenyatta National Hospital-University iya ku Nairobi Ethics na Research Committe e lyoa na ba University of Zambia Biomedical Research Ethics Committee (UNZABREC).

Aba muli aya amasambililo bakamubwesesha indalama isho mukatumina foni nga ca kuti mutumine foni ukwipusha pa lwa aya amasambililo.

Ukupingulapo ukuti umwana abe muli uku ukufwailisha kuitemenwa. Muli abantungwa ukupingulapo ukufumyamo umwana wenu mu masambililo inshita yonse iyo mulefwaya ukwabula ukuluusa nangu cimo. Kuti mwaeba fye umubomfi wa mu masambili ninshi capwa umwana wenu kuti bamufumyamo. Tamulingile ukulanda ico mwafumishamo umwana wenu nga ca kuti tamulefwaya ukulanda umulandu. Ukufumyamo umwana wenu takwakapumfyanye ukundapa umwana nga fintu alingile ukulaundapwa pali cino cifulo nangu ku fifulo fimbi.

Umuntu uulelandwapo ukuba muli aya amasambililo te kuti aisuminine umwine pa mulandu wa kuti mwaice (umuntu uushilakumanya imyaka 18). Tulemulomba ukupeela insambu sha kuti umwana wenu engaba muli aya amasambilillo.

Amashiwi ya mufyashi/umuleshi: Nimbelenga iyi formu yakusumininapo nangu kantile, nabambelengelako. Nalikwete ishuko lya kulanda pali aya amasambililo ya kufwailisha ne cing'ombe ca mu masambililo. Alyasuka ifipusho nakwete mu lulimi ulo ng'umfwa. Nabanondolwela ubusuma no bwafya ubwabamo. Ni njishiba ukuti bakampelako kope yakusumininapo pa numa ya kusaina. Ni njishiba ukuti ukuba muli aya amasambililo no mwana wandi kuitemenwa fye no kutila kuti naleka inshita yonse fye iyo ndefwaya ukuleka. Nijishiba ukuti kukaba ukubombesha ukusunga inkaama ya fyebo fyandi ne fya mwana wandi. Ifi na saina iyi formu tacilepilibula ukuti napeela insambu shonse isha mwana wandi pamo nga uuli mu masambili ya kufwailisha. Ni njisuminina fye ukuti umwana wandi abe mu masambililo ya kufwailisha: Umufyashi/Umuleshi signeca /Icifwati:_____Ubushiku

_____Umufyashi/Umuleshi ukulemba ishina:_____

Ine, ne usaine pe samba, ninondolwela umuntu uwe shina ilili pa muulu uuli muli aya amasambililo ifyebo fyonse ifilefwaikwa ifya muli aya masambililo ya kufwailisha kabili ninjishiba ukuti naumfwa fyone kabili umwine naitemenwa ukubamo kabili nasumina.

Ishina: _____

Ubushiku: _____

Signeca: _____

Ishina lya kwa kambone _____

Signeca: _____ Ubushiku; _____

Appendix VI: Assent Form

Icilelandwapo: **Ifyo ciba ku bulwele bwa kansa ubwa mu mukoshi na mu mutwe nga fintu casangwa pa cipatala ca kansa ica mu Lusaka mu Zambia.**

Ishina lyandi nine Dr. Uhenya Chumba. Nine dokota wa pali ino ncende ENT, Head and Neck Surgical Unit at KNH. Na kabili ndi mwana we sukulu uuletungulula amasambililo ya kufwailisha. Insambu sha kutungulula aya amasambililo shalipeelwa na ba Kenyatta National Hospital-University ku Nairobi Ethics and Research Committee (KNH-UoN ERC Protocol No. _____) na ba University of Zambia Biomedical Research Ethics Committee (UNZABREC).

Amasambililo ya kufwailisha ni lintu ba dokota bafwaya ifyebo ifingi ukusambilila ifingi pa cinatu cimo. Nde-esha ukusambilila ifingi pali kansa iya mu mukoshi na mu mutwe iya mu calo cesu. Kuli no kuba abantu 63 abaice na bakalamba abakaba muli aya amasambililo.

Nga wasumina ukuba mu masambililo, abafyashi bobe/abaleshi bakabepushapi fimo pa lwa iwe. Ifyebo ifyo bakalanda pali iwe fikafwilisha ukulonganika ifyebo pa bantu abalwala aya amalwele bafuma no kwishiba ulubali lwa mutwe no mukoshi ukuli ubulwele.

Kuti waipusha ifipusho inshita fye iili yonse. Kuti waipusha nomba. Kuti waipusha inshita imbi. Kuti walanda na ine nangu kuti walandako no muntu umbi.

Nga taulefwaya ukuba mu masambililo, ninshi taulingile ukubabo. Ishibeni ukuti cili kuli imwe ukuba mu masambililo kabili takuli nangu uumo uukafulwa nga taulefwaya ukuba mu masambililo. Ndi no kwipusha abafyashi bobe pa kuti bakakupeele insambu sha kuba mu masambililo, nomba nga cakuti abafyashi “basumina”, nga taulefwaya kuti “wakaana” no kupingulapo ukukanaba mu masambililo.

Nga twapwisha aya amasambililo tukalemba lipoti pa fikasambililwa. Muli iyi lipoti tamwakabe ishina lyobe nangu ukuti wali mu masambililo. Nga taulefwaya ukuba mu masambililo, ninshi taulingile ukubamo. Nga wasalapo ukuleka pa numa ya kutendeka, naco cine cili fye bwino. Abafyashi bobe nabo balishiba ifyo aya amasambililo yaaba.

Nga wasalapo ukuba muli aya amasambililo, twapapaata lemba ishina lyobe no kusaina.

Ine ....., ndefwaya ukuba muli aya masambililo ya kufwailisha.

.....(signeca /icifwati)

(Ubushiku)

Appendix VII (a): Kulongosola Formu Yobvomelezapo

Nambala ya maphunziro: ……. …….

Nkhani yake: MWAMENE ZIMAKKHALIRA NA MATENDA A KANSA YAPANKHOSI NA MUMUTU MONGA MWAMENE BANAPEZELA KUCIPATALA CA KANSA KU LUSAKA MU ZAMBIA

Ofufunza wa Mkulu: Dokota Uhenya Chumba (Amene aphunzira za matenda a M'makutu, Uphuno na Pa khosi, ku Yunivesiti ya ku Nairobi Uusambilila pa matwi, Imyona na ukulepula mu mikolomino, Yuniversiti ya ku Nairobi)

Akapitawo : Dokota. Peter Mugwe

Dokota. Samuel Nyagah

Dokota. Rachael Hapunda

MAU OYAMBILILA

Ndine osangalala kumuuzani za maphunziro yamene yasogozendwa na ofufunza wa mkulu amene achulidwa pamwambapa. Iyi Formu iliko kamba ka kufuna kumuthandizani kuti muzibe bwino zimene mufunikila kucita ngati mufuna kuti mutengeko mbali mu ma phunziro. Mukhale omasuka kufunsa mafunso pa cifukwa kwakhalira kufufuza uku, cizakhala bwanji ngati mwatengako mbali mu maphunziro aya, ni mabvuto ya bwanji mungapeze, ubwino ungakhalepo, ufulu wanu inu mwini, ngakhale mbali zina zimene sizinaculidwe pali iyi formu. Mafunso yanu yonse ngati yayankhidwa ndipo mubvomela, ndiye pamene mungasankhepo ukhalamo muli aya maphunzilo kapena ugwira nawo ntchito pamodzi amene afufuza.Ici ndicimene tinena kuti 'ubvomeleza kozifunila'. Ngati mwabvensesa ndipo mwabvomeleza ukhala muli aya maphunzilo, ndizamuphani kulemba dzina lanu nakusaina pali iyi formu. Mufunikila uziwa bwino kwambiri zinthu zonse zimene zigwira ntchito kwa anthu ofufuza fufuza zamuzipatala:

i. Utengamo mbali muli aya maphunziro ndikozifunila
ii. Mungasiye aya maphunziro nthawi ili yonse osakamba cifukwa cimene mwasiyila
iii. Ngati mwakana ukhala muli uku kufufuza, sicitathauza kuti simuzathandizidwa kulingana ndimene mufunikila kunthandizidwa pali cino cipatala olo ku cipatala cina. Tizamupasaniko kope ya ino formu pa kuti muzikalembapo.

Kodi ningapitilize? INDE/AYI

Amene abvomeleza aya maphunziro ni Kenyatta National Hospital-University ya ku Nairobi Ethics na ba Research Committee protocol Na. _____ bena ni ba University of Zambia Biomedical Research Ethics Committee (UNZABREC).

ZILI MUMAPHUNZILO

Kansa yamumutu ndi pankhosi ili kuonjezeka mu calo conse. Uphunzira pali aya matenda mu banthu osiyanasiyana ndi bvuto lalikulu, ambiri amapita ku cipatala pamene matenda afika pacimake. Nthawi zambiri kansa ya pakhosi namumutu, imakhalaso namu phuno,mumisepha ya pakhosi, namuziwalo zina zimene zilumikizana mutu na khosi.

CACIKULU CIMENE CIFUNIKA

Camene kwakhalira uku kufufuza pa matenda a Kansa ku Cipatala ca Kansa mu Lusaka mu Zambia, ndikufuna kuziwa m'mene matenda a kansa ya pankhosi na mumutu yakhalira.

MWAMENE MAPHUNZILO YAZACITIKILA

Ngati mwabvomela ukhala muli aya maphunziro, ndizamufunsani mafunso kumalo kumene muzakhala aufulu kuyankha ndipo tizakhala chabe awiri. Tikazakhalako chabe kwa phindi 20. Zimene ndizafunsa ndi izi: kukula kanu, kalidwe lanu m'zandalama, kukoka fodya ndi kumwa mowa. Kuzakhala kuziwa mbiri yanu pamatenda yamene munadwalapo.

Ndizafunako na nambala yanu ya foni kotero kuti ningamutumile ngati n'cofunika.

Mbiri ya umoyo wanu izagwiritsidwa ntchito chabe, ndi anthu amene ali mu ma phunziro awa, sikuzankhala kulangizako anthu ena. Mwina ningamutumileni foni kumuuzaniko zimene tapeze.

MABVUTO YANGAKHALEPO MULI AYA MAPHUNZILO

Kulibe bvuto yozibika bwino yapezeka mu aya maphunziro.

UBWINO ULIMO

Simuzaonongapo ndalama pa aya ma phunziro. Kufufuza uku kuzapangisa kuti tiziwe zambiri ponena za matenda a kansa ya pa khosi ndi mumutu.

NDALAMA ZOONONGEDWA NDI ZOBWEZELAPO

Simuzaonongapo ndalama pali aya ma phunziro ndipo simuzalandilapo ndalama popezeka muli aya ma phunziro.

MULI NAWO UFULU OLEKA

Ndikozifunila inu nokha ukhala muli uku kufufuza. Mungakane kukhala mu ma phunzilo aya ndiposo ngati mufuna kuleka mungaleke kulibe bvuto olo phindu lililonse limene muzapeza olo kukhala nalo.

FORMU YABVOMELEZELAPO (MAU OBVOMELEZA)

Mau ya amene ali mu ma phunziro

Nabelenga kapena ninene kuti, nabalengela mau ya muli iyi formu yaku bvomelelapo. Ninali ndi mwai okambisilana mau ali amu maphunziro ndikufufuza kwa katswiri mu ma phunziro awa. Mafunso anga anayankhidwa mu cinenero cimene ndimadziwa ndibvedtsetsa bwino. Mabvuto ndi ubwino umene ulimo andilongosolela. Nabvetsetsa kuti kukhala mu li aya ma phunziro ndikozifunila chabe ndikuti ngati ndifuna ningaleke nthawi ili yonse. Nabvomela kukhala mu li aya maphunziro kopanda unikakamiza.

Ndidziwa kuti kuli kusunga cinsinsi pa mbiri ya moyo wanga.

Pamene nasaina formu iyi ndi kukhala mu ma phunziro aya sicitathaunza kuti ufulu wanga monga munthu wantha.

Nabvomela kukhala mukufufuza uku ndi mu ma maphunziro aya : Inde/Ayi

Dzina la uli mu ma phunziro: _____

Sigineca ya uli mu ma phunziro / Cifwati: _____

Tsiku: _____

Mau a Mfufuzi

Ine, wamene nasayina pansipa, nalongoselela munthu wa dzina liri pa mwamba amene ali mu ma phunziro mau onse ofunika mu ma phunziro yaku fufuza ndipo ndine otsimikiza kuti abvela ndikuti azifunila yekha ndipo abvomela.

Dzina la munthu ofufuza: _____

Tsiku: _____ **Sigineca**: **_____**

Malo ama phunziro: _____ [i.e. wancthito wamu ma phunziro amene analongosola formu yosainapo .]

Ngati mufuna kubvela zina zambiri onani **_____** pa

_____ kucokela

_____ ku _____.

Dzina la mboni (Mboni ngati azafunika kwa amene ali mumaphunzilo amene sadziwa kubelenga azafunikila kukhala munthu wamene onse a wiri ofufuza ndi ophunzira abvomelezana kuti apezekepo.)

Dzina _____

Mau omuonelanipo _____

Sigineca /Cifwati: _____

Tsiku: **_____**

Ngati mufuna kudziwa zambiri ponena za ufulu wanu monga munthu amene ali mu ma phunziro, Onani:

Sekritare/Ceyamani,

Kenyatta National Hospital-University of Nairobi Ethics and Research Committee

Telephone No. 2726300 Ext. 44102

Email uonknh_erc@uonbi.ac.ke.

Ufufuzi wa mkulu:

Dr.Uhenya Chumba

ENT-Head and neck surgery

Department of surgery

School of Medicine, UON

P.O. Box 70128-00400 Nairobi

Mobile number: 0790915762

Email: uhenyachumba@gmail.com

Bakapitawa:

Dokota. Peter Mugwe

MBChB., M. Med (ENT)

Consultant ENT, Head and Neck Surgeon,

Senior Lecturer,

Departmenti ya Kulepula

Yuniversite ya ku Nairobi

P.O. Box 29773-00202 Nairobi

Foni: 0722513778

Dokota. Samuel Nyagah

MBChB., M. Med (ENT),

Consultant ENT, Head and Neck Surgeon,

Kenyatta National Hospital
P.O Box 20723-00202 Nairobi
Foni: 0721424408
Dr. Rachael Hapunda-Chibanga
MBChB, M. Med (ENT),
Consultant ENT Head and Neck Surgeon
Department of Surgery
School of Medicine,
University of Zambia
Mobile Number: +260 96 5235227
Email: karanda2007@gmail.com

Cheyapersoni

University of Zambia Biomedical Research Ethics Committee,
Ridgeway Campus, Nationalist Road
P.O. Box 50110, Lusaka, Zambia
+2600211-256067
unzarec@unza.zm

Appendix VII (b): Ubvomeleza Kwa Makolo

Nkhani yake (Chamene tikambapo): Mwamene zimakhalira na ma matenda a kansa ya pa nkhosi na mu mutu monga mwamene bana pezela ku cipatala ca kansa ku Lusaka mu Zambia.

Ofufuza wa mkulu: Dr. Uhenya Chumba (amene aphunzira pa matenda a makutu, uphuno nakung'amba pankhosi, University of Nairobi)

Akapitawo: Dr. Peter Mugwe

Dr. Samuel Nyagah

Ndine osangalala kumuuzani za maphunzilo yamene yasogozendwa na ofufunza wamkulu amene achulidwa pamwambapa. Cifuniro ca iyi formu yobvomelezelapo ndi cakuti mukhale ndi cidziwitso comuthandizani kusankha ngati mwana wanu angakhale mumaphunziro kapena ayi. Khalani a ufulu kufunsa mafunso cifukwa kwakhala ma phunziro aya, cizakhala bwanji ngati mwana wanu akhala mu ma phunziro, mabvuto ndi ubwino umene ungapezekemo, ufulu wa mwana wanu monga odzipeleka yekha, kapene mbali zina zakufufuza uku mwinanso ndi mbali zina zimene sizinabveke bwino mu formu iyi. Ngati tayankha mafunso anu onse kulingana namwamene mungafunile, mungasankhepo ngati mungafune mwana wanu unkhalamo mumaphunzilo kapena ayi. Zimene takambapo ndiye zimene tikamba kuti 'ubvomelezeko' Ngati mwabvetseta ndiyeno mwabvomeleza kuti mwana wanu akakhalemo muma phunziro, nizamuuza kuti mukalembe dzina ndi kusaina formu iyi. Mufunika uziwa zenizeni ponena za amene a magwira ntchito mu zipatala. i) Mwana wanu ukhala mu ma phunziro aya ndikuzifunila chabe ii) Mwana wanu angacokemo mu ma phunziro nthawi ili yonse osakamba na cifukwa iii) Ngati simufuna kuti mwana wanu akakhalemo mu ma phunziro sicitathauza kuti simuzathandizidwa kulingana ndimene mufunikila kunthandizidwa pali cino cipatala olo ku cipatala cina.

Kodi ningapitilize? INDE/AYI.

Tizaona ziri mu formu iyi pamodzi ndi inu ndipo mufunikira kumubvomelaza mwana wanu kuti a khale mu ma phunziro awa. Tizamupasaniko kope ya iyi formu pakuti mukazisungile. Mufunika udziwa kuti ngati mwabvomeleza chabe, mwana wanu azamulongosolela mwamene progilamu izakhalira ndipo azalemba formu yobvomeleza ukhala mu ma phunziro. Tipepha cilorezo canu kuti mwana angakhale mu ma phunziro aya. Uku kufufuza kuli kwa matenda a kansa ya pa khosi na ya mumutu ndi kwa odwala amene amapita ku Cipatla ca Kansa mu Lusaka.

CIZAKHALA BWANJI NGATI MWASAKHA KUTI MWANA WANU AKHALEMO MU MA PHUNZIRO YAKU FUFUZA? Ngati mwabvomeleza kuti mwana wanu akhalemo mu ma

phunziro, zotsatilazi ndizimene zizacitika: Ofufuza wa mkulu azamufunsa m'malo mwamene muzakhale chabe othandizila ndiposo mwamene sazapeza bvuto poyankha mafunso. Bazamufunsa chabe kwa phindi zokwanila 20. Azamufunsa pankhani monga ngati, kumene anacokela, makhalidwe anu a pa nyumba, makhalidwe anu a mu comuniti, ndipamene kansa yafika ndi marekodi yanu yakucipatala imene ikamba pa matenda a kansa. Akantha kumufunsa, ofufuza wa mkulu azamupephani kuti mumupase nambala ya fone pamene angatumile. Ngati mwabvomela azamuuzani mau ponena za ine yamene yazagwiritsidwa ntchito na abanthu amene azakhala mu ma phunziro, koma sibazapasako anthu ena. Ningamuuzeni zomwe zizapezeka mukufufuza kumeneku.

MABVUTO YANGAKHALEPO MULI AYA MAPHUNZIRO

Kulibe bvuto yozibika bwino yapezeka mu aya maphunziro.

UBWINO ULIMO

Simuzaononga po ndalama pali aya ma phunziro. Kufufuza uku kuzapangisa kuti tiziwe zambiri ponena za matenda a kansa ya pa khosi ndi mumutu.

NDALAMA ZOONONGEDWA NDI ZOBWEZELAPO

Simuzaononga po ndalama pali aya ma phunziro ndipo simuzalandilapo ndalama popezeka muli aya ma phunziro.

MULI NAWO UFULU OLEKA

Kuti mwana wanu akhale mu ma phunziro aya ndikusankhapo kwanu kozifunira. Simufunikila ukhala ndi mantha kucosa mwana wanu pa ma phunziro awa nthawi ili yonse mungafune kutero ndipo palibe cimene muzaluza. Mungaziwitse chabe wantchito wa ma phunziro kuti mufunsa umucosa mwana wanu. Simufunikaso nokamba cifukwa mwacosela mwana wanu. Kumocosamo mwana wanu mu ma phunziro sikuzasokoneza kuthandidwa kumene kumapelekedwa kwa iye pamalo ano olo malo ena alionse.

Tizayesetsa kusunga cinsinsi pa mau onse amene muzatiuuza. Tizagwiritsila ntchito nambala yazibilako mwana wanu, mau onse azakhala mu kopyuta yokhoma ndipo tizasunga mapepala yonse mukabineti yamene izakhala yokhoma nthawi zonse. Ngakhale ziri tero, kulibe kakhomendwe kamene munthu wa nzeru zake angalephele ukhomolora, kansi zingacitika kuti munthu anga tsegule ndikuona muma rekodi kuti mwana wanu anali muli mu ma phunziro aya. Ndiyeno mwina simungafune ndi kuyankha mafunso ngati mwafunsidwa. Ngati kuli mafunso yamene simungafune uyankha, mungayasiye osawayankha. Muli nawo ufulu okana kuyankha ndi

kufunsiwa mafunso ena. Tizayesetsa kuoona kuti amufunsilani kumalo kumene kulibe anthu ambiri.

Ngati muli ndi mafunso ena ndipo ngati kuli zimene zimudetsani nkhawa pokuona kuti mwana wanu ali mu ma phunziro aya, mungatume fone olo meseji ku ogwira ntchito mu ma phunziro pa nambala ili pansi ya peji. Ngati mufuna kubvela zambiri pa ufulu wa mwana wanu monga wa amene ali mu ma phunziro yo fufuza aya, mungatume ku Sekritale/Cheyapesoni, Kenyatta National Hospital-University ya ku Nairobi Ethics ndi Research Committe ndiposo ndi a University of Zambia Biomedical Research Ethics Committee (UNZABREC).

Amene ali mu ma phunziro azamubwezelani ndalama ngati mwatuma fone kufunsa za ma phunziro aya.

Kusankhapo kwakuti mwana wanu akhale muli uku kufufuza ndikozifunira inu nokha. Muli a ufulu kumucosamo mwana wanu mu ma phunziro nthawi ili yonse ndipo simuzaluuza kali konse. Mungauze chabe wa ntchito wa ma phunziro kuti mwamucosa mwana wanu mu ma phunziro. Simuzafunika kukamba cifukwa cimene mwamucosela mwana wanau. Kumocosamo mwana wanu mu ma phunziro sikuzasokoneza kuthandidwa kumene kumapelekedwa kwa iye pamalo ano olo malo ena alionse.

Munthu amene atengamo mbali mu ma phunziro ano sangazibvomeleza ekha pokhala kuti ndi wacicepere. (Mwana amene sanafike zaka zokwanira 18). Tikupephani kuti mubvomeleze mwana wanu akhalemo mu ma phunziro aya.

Mau ya kholo/omusunga: Nabelenga kapena ninene kuti, nabalengela mau ya muli iyi formu yaku bvomelelapo. Ninali ndi mwai okambisilana mau ali amu maphunziro ndikufufuza kwa katswiri mu ma phunzilo awa. Mafunso anga anayankhidwa mu cinenero cimene ndimadziwa ndibvetsetsa bwino. Mabvuto ndi ubwino umene ulimo andilongosolela.

Pamene nasaina formu iyi ndi kukhala mu ma phunziro aya sicitathaunza kuti ufulu wanga monga munthu wantha.

Ndiziwa kuti azanipasako kope ya uku kubvomelezana ngati nasaiana. Niziba kuti kukhala mu ma phunziro aya na mwana wanga ndikozifunira chabe ndikuti ningacokemo nthawi iri yonse nikafuna. Ndiziwa kuti nkofunika kusunga cinsinsi ca mbiri yanga ndi ya mwana wanga. Pamene nasaina formu iyi sicitathaunza kuti napasa ufulu onse wa mwana wanga monga amene ali mu ma phunziro aya ndi kufufuza uku.

Nabvomela mwa ine nekha kuti mwana wanga akhale mu ma phunziro yofufuza: Kholo/Omusunga sigineca /Cifwati:_____Tsiku _____Kholo/Omusunga kulemba Dzina:_____

Ine wamene nasaina pansipa, nafotokozela munthu wa dzina liri pamwambapa amene ali mu ma phunziro zonse zofunika muli aya ma phunziro ndi kufufuza ndipo ndine otsimikiza kuti a bvesetsa ndikuti iye mwini azipeleka ukhalamo ndipo abvomela.

Dzina: _____

Tsiku: _____

Sigineca: _____

Dzina la mboni _____

Sigineca: _____ Tsiku; _____

Appendix VIII: Assent Form

Nkhani yake (Chamene tikambapo): Mwamene zimakhalira na ma matenda a kansa ya pa nkhosi na mu mutu monga mwamene bana pezela ku cipatala ca kansa ku Lusaka mu Zambia.

Dzina langa ndine Dr. Uhenya Chumba. Ndine dokota pa malo ano ENT, Head and Neck Surgical Unit at KNH. Ndiponso ndine mwana wa sukulu ugwirizanitsi wa ma phunziro yo fufuza. Mphavu zakuti nigwirizanise kufufuza uku zinapasidwa na ku Kenyatta National Hospital-University ku Nairobi Ethics and Research Committee (KNH-UoN ERC Protocol No. _____) na ku University of Zambia Biomedical Research Ethics Committee (UNZABREC).

Maphunziro ofufuzafufuza amakkhalako kotero kut a dokota aphunzire zambiri panena za cinthu cimodzi. Ndiyesa yesa kuphunzira zambiri ponena za kansa ya pakhosi ndi m'mutu yamuno mu calo canthu. Kuzakhala anthu 63 akulu ndi a cicepere amene azakhala muli aya maphunziro.

Ngati mwabvomela kukhala mu ma phunziro, makolo ako/okusunga azawafunsako zina zake ponena zaiwe. Mau onena zaiwe azathandizako kusonkhanisa bwino fundo pa anthu odwala aya matenda nakuziwa ni mbali iti ya khosi na mutu kumene kuli aya matenda.

Ungafunse mafunso nthawi iri yonse. Ungafunse tsopano. Ungafunse nthawi ina. Ungakamba naine olo ungakambe na munthu wina.

Ngati sufuna ukhalamo mu ma phunziro, ndiyekuti sufunika upezekapo pano. Dziwani kuti ciri kwa imwe ukhalamo mu ma phunziro ndipo kulibe amene azamukalipa ngati simufuna upezekamo. Ndizafunsa makolo ako kuti akakubvomeleze kukhala mu ma phunziro , lomba ngati makolo "abvomela", koma iwe mwini "sufuna" ungakane kukhalamo mu ma phunziro.

Ngati tasiliza aya ma phunziro tizalemba lipoti pa zimene zizaphunziridwa. Muli iyi lipoti simuzapezeka dzina lako ngakhale kuti unalimo mu ma phunziro. Ngati siufuna ukhala mu ma phunziro, ndiyekuti siufuni upezekamo. Ngati wasankhapo kulekela pakati ma phunziro palibe mulandu. Makoko ako nawo adziwa mwamene ma phunziro awa yaliri.

Ngati wasankhapo ukhala mu ma phunziro aya, conde lemba ndiza lako ndi kusaiana.

Ine ....., ndifuna ukhala mu ma phunziro yakufufun

.....(sigineca /cifwati)

(Tsiku)

Appendix IX: Questionnaire (Study Proforma)

Code Number: ……

1. **SOCIODEMOGRAPHICS**

1.1 Sex:

Male ( )

Female ( )

1.2 Age: ……..

1.3 Marital Status:

Single ( )

Married ( )

Divorced ( )

Widowed ( )

1.4 Religion

Christian ( )

Muslim ( )

Hindu ( )

Other ( )

1.5 Residence:

Urban ( )

Rural ( )

1.6 Province:……

1.7 Highest level of education:

None ( )

Primary ( )

Secondary ( )

Tertiary ( )

1.8 Occupation:

Employed ( )

Self-employed ( )

Occupation Name:…….

1.7 Income:

K2000 ( )

K5000 ( )

K10000 ( )

>K10000 ( )

2. **SMOKING AND TOBACCO HISTORY**

2.1 Do you use Tobacco use?

Yes ( )

No ( )

If NO, go to question 2.5.

2.2 What form:

Snuff ( )

Chew ( )

Smoke ( )

2.1 Are you current using?

Yes ( )

No ( )

2.2 Have you quit using tobacco?

Yes ( )

No ( )

2.3 When was tobacco last used?.....

2.3. Cigarette smoked per day……..

2.4 Number of years used……

2.5 Alcohol intake?

Yes ( )

No ( )

If NO, go to part 3.

2.6 If yes,

Regular ( )

Occasional ( )

2.7 What is consumed?

Beer ( )

Wine ( )

Spirits ( )

Other ( )

2.8 Amount of drinks per day……..

2.9 Number of times per week……

3. PATHOLOGY DATA

3.1 Tumour site ( )

Oral cavity ( )

Nasopharynx ( )

Oropharynx ( )

Hypopharynx ( )

Larynx ( )

Major Salivary gland ( )

Sino-nasal ( )

Thyroid gland ( )

Others.....

3.2 Histology:

Squamous cell carcinoma ( )

Adenocarcinoma ( )

Anaplastic ( )

Adenocystic ( )

Kaposi's sarcoma ( )

Papillary Thyroid Carcinoma ( )

Follicular Thyroid carcinoma ( )

Medullary thyroid carcinoma ( )

Anaplastic carcinoma ( )

Other (specify).....

3.3 Grading

Well differentiated ( )

Moderately differentiated ( )

Poorly differentiated ( )

Undifferentiated ( )

3.4 Tumour stage

T…….. N…… M……

Stage:

I ( )

II ( )

III ( )

IV ( )

Appendix X: TNM Staging of Some Head and Neck Cancers

A. Oral cavity

4.1 Definition of Primary Tumor (T)

✓	*T Category*	*T Criteria*
	TX	Primary tumor cannot be assessed
	Tis	Carcinoma *in situ*
	T1	Tumor ≤ 2 cm with depth of invasion (DOI)* ≤ 5 mm
	T2	Tumor ≤ 2 cm with DOI* > 5 mm *or* tumor > 2 cm and ≤ 4 cm with DOI* ≤ 10 mm
	T3	Tumor > 2 cm and ≤ 4 cm with DOI* > 10 mm *or* tumor > 4 cm with DOI* ≤ 10 mm
	T4	Moderately advanced or very advanced local disease
	T4a	Moderately advanced local disease Tumor > 4 cm with DOI* > 10 mm **or** tumor invades adjacent structures only (e.g., through cortical bone of the mandible or maxilla or involves the maxillary sinus or skin of the face) Note: Superficial erosion of bone/tooth socket (alone) by a gingival primary is not sufficient to classify a tumor as T4.
	T4b	Very advanced local disease Tumor invades masticator space, pterygoid plates, or skull base and/or encases the internal carotid artery

*DOI is depth of invasion and **not** tumor thickness.

B. Oropharynx

The oropharynx includes the base of the tongue, the inferior surface of the soft palate and uvula, the anterior and posterior tonsillar pillars, the glossotonsillar sulci, the pharyngeal tonsils, and the lateral and posterior pharyngeal walls.

PRIMARY TUMOR (T)

TX	Primary tumor cannot be assessed
T0	No evidence of primary tumor
Tis	Carcinoma *in situ*
T1	Tumor 2 cm or less in greatest dimension
T2	Tumor more than 2 cm but not more than 4 cm in greatest dimension
T3	Tumor more than 4 cm in greatest dimension or extension to lingual surface of epiglottis
T4a	Moderately advanced local disease Tumor invades the larynx, deep/extrinsic muscle of the tongue, medial pterygoid, hard palate, or mandible*
T4b	Very advanced local disease Tumor invades the lateral pterygoid muscle, pterygoid plates, lateral nasopharynx, or skull base, or encases the carotid artery

**Note: Mucosal extension to lingual surface of epiglottis from primary tumors of the base of the tongue and vallecula does not constitute invasion of larynx.*

C. Larynx

The larynx includes all laryngeal structures from the tip of the epiglottis to the cricoid cartilage inferiorly and is subdivided into three specific sites: supraglottis, glottis, and subglottis.

Sites of the Larynx

Site	*Subsite*
Supraglottis	Suprahyoid epiglottis Infrahyoid epiglottis Aryepiglottic folds (laryngeal aspect) Arytenoids Ventricular bands (false vocal folds)
Glottis	True vocal folds, including anterior and posterior commissures; occupies a horizontal place 1 cm in thickness, extending inferiorly from the lateral margin of the ventricle
Subglottis	Region extending from the lower boundary of the glottis to the lower margin of the cricoid cartilage

PRIMARY TUMOR (T)

TX Primary tumor cannot be assessed
T0 No evidence of primary tumor
Tis Carcinoma *in situ*

Supraglottis

T1 Tumor limited to one subsite of the supraglottis with normal vocal fold mobility
T2 Tumor invades mucosa of more than one adjacent subsite of the supraglottis or glottis or region outside the supraglottis (e.g., mucosa of base of tongue, vallecula, medial wall of pyriform sinus) without fixation of the larynx
T3 Tumor limited to the larynx with vocal fold fixation and/or invades any of the following: postcricoid area, pre-epiglottic tissues, paraglottic space, and/or inner cortex of thyroid cartilage
T4a Moderately advanced local disease
Tumor invades through the thyroid cartilage and/or invades tissues beyond the larynx (e.g., trachea, soft tissues of neck including deep extrinsic muscle of the tongue, strap muscles, thyroid, or esophagus)
T4b Very advanced local disease
Tumor invades prevertebral space, encases carotid artery, or invades mediastinal structures

Glottis

T1 Tumor limited to the vocal fold(s) (may involve anterior or posterior commissure) with normal mobility
T1a Tumor limited to one vocal fold
T1b Tumor involves both vocal folds
T2 Tumor extends to the supraglottis and/or subglottis, and/or with impaired vocal fold mobility
T3 Tumor limited to the larynx with vocal fold fixation and/or invasion of paraglottic space, and/or inner cortex of the thyroid cartilage
T4a Moderately advanced local disease
Tumor invades the outer cortex of the thyroid cartilage and/or invades tissues beyond the larynx (e.g., trachea, soft tissues of the neck, including deep extrinsic muscle of the tongue, strap muscles, thyroid, or esophagus)
T4b Very advanced local disease
Tumor invades prevertebral space, encases carotid artery, or invades mediastinal structures

Subglottis

T1 Tumor limited to the subglottis
T2 Tumor extends to the vocal cord(s) with normal or impaired mobility.
T3 Tumor imited to the larynx with vocal fold fixation.
T4a Moderately advanced local disease
Tumor invades cricoid or thyroid cartilage and/or invades tissues beyond the larynx (e.g., trachea, soft tissues of the neck including deep extrinsic muscles of the tongue, strap muscles, thyroid, or esophagus)
T4b Very advanced local disease
Tumor invades prevertebral space, encases carotid artery, or invades mediastinal structures

D. Hypopharynx

The hypopharynx includes the pyriform sinuses, the lateral and posterior hypopharyngeal walls, and the postcricoid region.

PRIMARY TUMOR (T)

TX Primary tumor cannot be assessed
T0 No evidence of primary tumor
Tis Carcinoma *in situ*
T1 Tumor limited to one subsite of the hypopharynx and is 2 cm or less in greatest dimension
T2 Tumor invades more than one subsite of the hypopharynx or an adjacent site, or measures more than 2 cm but not more than 4 cm in greatest dimension without fixation of the hemilarynx or extension to the esophagus
T3 Tumor more than 4 cm in greatest dimension or with fixation of the hemilarynx or extension to the esophagus
T4a Moderately advanced local disease
Tumor invades thyroid/cricoid cartilage, hyoid bone, thyroid gland, esophagus, or central compartment soft tissue*

T4b Very advanced local disease
Tumor invades prevertebral fascia, encases carotid artery, or involves mediastinal structures

**Note: Central compartment soft tissue includes prelaryngeal strap muscles and subcutaneous fat.*

E. Nasal Cavity and Paranasal Sinuses

The paranasal sinuses include the ethmoid, maxillary, sphenoid, and frontal sinuses.

PRIMARY TUMOR (T)

TX Primary tumor cannot be assessed
T0 No evidence of primary tumor
Tis Carcinoma *in situ*

Maxillary Sinus

The maxillary sinus is a pyramid-shaped cavity within the maxillary bone. The medial border is the lateral nasal wall. Superiorly, the sinus abuts the orbital floor and contains the infraorbital canal. The posterolateral wall is anterior to the infratemporal fossa and pterygopalatine fossa. The anterior wall is posterior to the facial skin and soft tissue. The floor of the maxillary antrum extends below the nasal cavity floor and is in close proximity to the hard palate and maxillary tooth roots.

T1 Tumor limited to the maxillary sinus mucosa with no erosion or destruction of bone
T2 Tumor causing bone erosion or destruction, including extension into the hard palate and/or middle nasal meatus, except extension to the posterior wall of the maxillary sinus and pterygoid plates
T3 Tumor invades any of the following: bone of the posterior wall of the maxillary sinus, subcutaneous tissues, floor or medial wall of the orbit, pterygoid fossa, or ethmoid sinuses
T4a Moderately advanced local disease
Tumor invades anterior orbital contents, skin of cheek, pterygoid plates, infratemporal fossa, cribriform plate, sphenoid or frontal sinuses
T4b Moderately advanced local disease
Tumor invades any of the following: orbital apex, dura, brain, middle cranial fossa, cranial nerves other than maxillary division of trigeminal nerve (V_2), nasopharynx, or clivus

Nasal Cavity and Ethmoid Sinus

The nasal cavity includes the nasal antrum and the olfactory region. The subsites within the nasal cavity include the septum; superior, middle, and inferior turbinates; and olfactory region of the cribriform plate. The ethmoid sinus is made up of several thin-walled air cells. Laterally, the ethmoid sinus is bound by a thin bone called the lamina papyracea, which separates it from the medial orbit. The posterior border of the ethmoid sinus is close to the optic canal. The anterosuperior border or roof of the ethmoid is formed by the fovea ethmoidalis, which separates it from the anterior cranial fossa. The perpendicular plate of the ethmoid bone separates the ethmoid cavity into left and right sides.

T1 Tumor restricted to any one subsite, with or without bony invasion
T2 Tumor invades two subsites in a single region or extending to involve an adjacent region within the nasoethmoidal complex, with or without bony invasion
T3 Tumor extends to invade the medial wall or floor of the orbit, maxillary sinus, palate, or cribriform plate
T4a Moderately advanced local disease
Tumor invades any of the following: anterior orbital contents, skin of nose or cheek, minimal extension to anterior cranial fossa, pterygoid plates, sphenoid or frontal sinuses
T4b Very advanced local disease
Tumor invades any of the following: orbital apex, dura, brain, middle cranial fossa, cranial nerves other than V_2, nasopharynx, or clivus

F. Salivary Glands

The salivary glands include the parotid, submandibular, sublingual, and minor salivary glands.

PRIMARY TUMOR (T)

TX Primary tumor cannot be assessed
T0 No evidence of primary tumor
T1 Tumor 2 cm or less in greatest dimension without extraparenchymal extension
T2 Tumor greater than 2 cm but not more than 4 cm in greatest dimension without extraparenchymal extension*
T3 Tumor more than 4 cm and/or tumor having extraparenchymal extension
T4a Moderately advanced local disease
Tumor invades the skin, mandible, ear canal, and/or facial nerve
T4b Very advanced local disease
Tumor invades the skull base and/or pterygoid plates and/or encases the carotid artery

**Note: Extraparenchymal extension is a clinical macroscopic evidence of invasion of soft tissues. Microscopic evidence alone does not constitute extraparenchymal extension for classification purposes.*

G. Neck Staging under the TNM Staging System for Head and Neck Tumors

This staging system excludes the nasopharynx and thyroid.

REGIONAL LYMPH NODES (N)

NX Regional lymph nodes cannot be assessed
N0 No regional nodes metastasis
N1* Metastasis in a single ipsilateral lymph node, 3 cm or less in greatest dimension
N2* Metastasis in a single ipsilateral lymph node, more than 3 cm but not more than 6 cm in greatest dimension; or in multiple ipsilateral lymph nodes, none more that 6 cm in greatest dimension; or in bilateral or contralateral lymph nodes, none greater than 6 cm in greatest dimension
N2a* Metastasis in a single ipsilateral lymph node, more than 3 cm but not more than 6 cm in greatest dimension
N2b* Metastasis in multiple ipsilateral lymph nodes, none more that 6 cm in greatest dimension
N2c* Metastasis in bilateral or contralateral lymph nodes, none more than 6 cm in greatest dimension
N3* Metastasis in a lymph node more than 6 cm in greatest dimension.

**Note: A designation of "U" or "L" may be used for any N stage to indicate metastasis above the lower border of the cricoid cartilage (U) or below the lower border of the cricoid cartilage (L). Similarly, clinical/radiological ECS should be recorded as E– or E+.*

DISTANT METASTASIS (M)

MX Distant metastasis cannot be assessed
M0 No distant metastasis
M1 Distant metastasis

H. TNM Staging for the Larynx, Oropharynx, Hypopharynx, Oral Cavity, Salivary Glands, and Paranasal Sinuses

Stage Grouping			
Stage 0	Tis	N0	M0
Stage I	T1	N0	M0
Stage II	T2	N0	M0
Stage III	T3	N0	M0
	T1	N1	M0
	T2	N1	M0
	T3	N1	M0
Stage IVA	T4a	N0	M0
	T4a	N1	M0
	T1	N2	M0
	T2	N2	M0
	T3	N2	M0
	T4a	N2	M0
Stage IVB	Any T	N3	M
	T4b	Any N	M0
Stage IVC	Any T	Any N	M1

A. Nasopharynx

The nasopharynx includes the vault, the lateral walls, the posterior walls, and the superior surface of the soft palate.

PRIMARY TUMOR (T)

TX Primary tumor cannot be assessed
T0 No evidence of primary tumor
Tis Carcinoma *in situ*
T1 Tumor confined to the nasopharynx or tumor extends to the oropharynx and/or nasal cavity without parapharyngeal extension
T2 Tumor with parapharygeal extension
T3 Tumor involves bony structures of skull base and/or paranasal sinuses
T4 Tumor with intracranial extension and/or involvement of cranial nerves, hypopharynx, orbit, or with extension to the infratemporal fossa/masticator space

REGIONAL LYMPH NODES (N)

This site is different from other head and neck sites.

NX Regional lymph nodes cannot be assessed
N0 No regional lymph node metastasis
N1 Unilateral metastasis in cervical lymph node(s), 6 cm or less in greatest dimension, above the supraclavicular fossa, and/or unilateral or bilateral retropharyngeal lymph nodes, 6 cm or less in greatest dimension*
N2 Bilateral metastasis in cervical lymph node(s), 6 cm or less in greatest dimension, above the supraclavicular fossa*
N3 Metastasis in lymph node)* >6 cm and/or to supraclavicular fossa*
N3a Greater than 6 cm in dimension
N3b Extension to the supraclavicular fossa**

**Note: Midline nodes are considered ipsilateral nodes.*

Stage Grouping

This stage grouping is unique to regional lymph nodes.

Stage 0	Tis	N0	M0
Stage I	T1	N0	M0
Stage II	T2	N1	M0
	T2	N0	M0
	T2	N1	M0
Stage III	T1	N2	M0
	T2	N2	M0
	T3	N0	M0
	T3	N1	M0
	T3	N2	M0
Stage IVA	T4	N0	M0
	T4	N1	M0
	T4	N2	M0
Stage IVB	Any T	N3	M0
Stage IVC	Any T	Any N	M1

B. Thyroid

The thyroid is composed of right and left lobes, with an isthmus connecting the two lobes.

PRIMARY TUMOR (T)

TX Primary tumor cannot be assessed
T0 No evidence of primary tumor

Stage Grouping

Separate stage groupings are recommended for papillary or follicular, medullary, and anaplastic (undifferentiated) carcinoma.

Papillary or Follicular Carcinoma (differentiated)			
Under 45 years			
Stage I	Any T	Any N	M0
Stage II	Any T	Any N	M1
45 years and older			
Stage I	T1	N0	M0
Stage II	T2	N0	M0
	T3	N0	M0
Stage III	T1	N1a	M0
	T2	N1a	M0
	T3	N1a	M0
Stage IVA	T4a	N0	M0
	T4a	N1a	M0
	T1	N1b	M0
	T2	N1b	M0
	T3	N1b	M0
	T4a	N1b	M0
Stage IVB	T4b	Any N	M0
Stage IVC	Any T	Any N	M1
Medullary Carcinoma (all age groups)			
Stage I	T1	N0	M0
Stage II	T2	N0	M0
	T3	N0	M0
Stage III	T1	N1a	M0
	T2	N1a	M0
	T3	N1a	M0

Stage Grouping

This stage grouping is unique to regional lymph nodes.

Stage 0	Tis	N0	M0
Stage I	T1	N0	M0
Stage II	T2	N1	M0
	T2	N0	M0
	T2	N1	M0
Stage III	T1	N2	M0
	T2	N2	M0
	T3	N0	M0
	T3	N1	M0
	T3	N2	M0
Stage IVA	T4	N0	M0
	T4	N1	M0
	T4	N2	M0
Stage IVB	Any T	N3	M0
Stage IVC	Any T	Any N	M1

Stage IVA	T4a	N0	M0
	T4a	N1a	M0
	T1	N1b	M0
	T2	N1b	M0
	T3	N1b	M0
	T4a	N1b	M0
Stage IVB	T4b	Any N	M0
Stage IVC	Any T	Any N	M1
Anaplastic Carcinoma*			
Stage IVA	T4a	Any N	M0
Stage IVB	T4b	Any N	M0
Stage IVC	Any T	Any N	M1

**All anaplastic carcinomas are considered Stage IV.*

C. Mucosal Melanoma*

Malignant melanoma involving a mucosal (noncutaneous) site within the upper aerodigestive tract.

PRIMARY TUMOR (T)

TX Primary tumor cannot be assessed
T0 No evidence of primary tumor
T3 Mucosal disease
T4a Moderately advanced disease
Tumor involving deep soft tissue, cartilage, bone, or overlying skin
T4b Very advanced disease
Tumor involving brain, dura, skull base, lower cranial nerves (IX, X, XI, or XII), masticator space, internal or common carotid artery, prevertebral space, or mediastinal structures

REGIONAL LYMPH NODES (N)

Regional lymph nodes are the central compartment, lateral cervical, and upper mediastinal lymph nodes.

NX	Regional lymph nodes cannot be assessed
N0	No regional lymph node metastases
N1	Regional lymph node metastases present

DISTANT METASTASIS (M)

MX	Distant metastasis cannot be assessed
M0	No distant metastasis
M1	Distant metastasis

Stage Grouping*

Stage III	T3	N0	M0
Stage IVA	T4a	N0	M0
	T3-T4a	N1	M0
Stage IVB	T4b	Any N	M0
Stage IVC	Any T	Any N	M1

**Note: Mucosal melanoma is an aggressive group of tumors. As a result, T1-T2 and Stage I and II are omitted.*

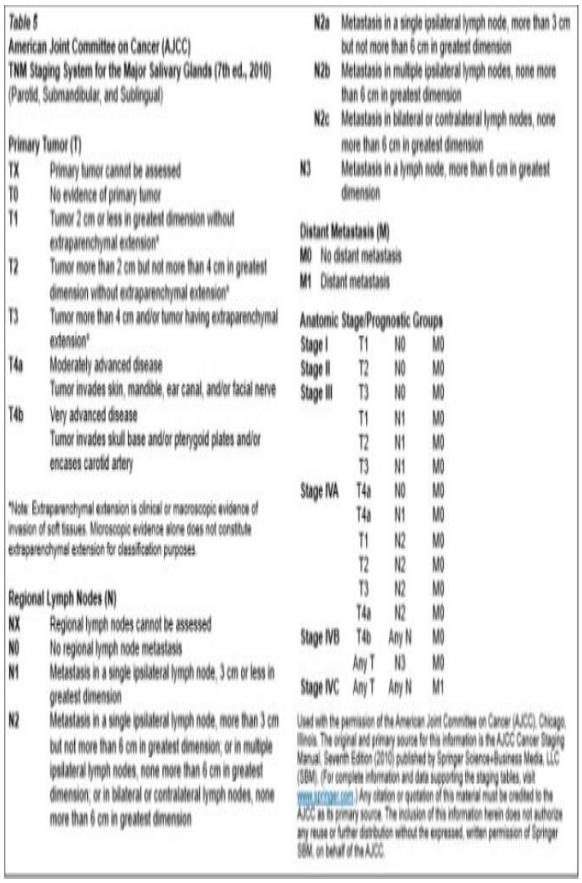


Table 5
American Joint Committee on Cancer (AJCC)
TNM Staging System for the Major Salivary Glands (7th ed., 2010)
(Parotid, Submandibular, and Sublingual)

Primary Tumor (T)

TX	Primary tumor cannot be assessed
T0	No evidence of primary tumor
T1	Tumor 2 cm or less in greatest dimension without extraparenchymal extension*
T2	Tumor more than 2 cm but not more than 4 cm in greatest dimension without extraparenchymal extension*
T3	Tumor more than 4 cm and/or tumor having extraparenchymal extension*
T4a	Moderately advanced disease Tumor invades skin, mandible, ear canal, and/or facial nerve
T4b	Very advanced disease Tumor invades skull base and/or pterygoid plates and/or encases carotid artery

*Note: Extraparenchymal extension is clinical or macroscopic evidence of invasion of soft tissues. Microscopic evidence alone does not constitute extraparenchymal extension for classification purposes.

Regional Lymph Nodes (N)

NX	Regional lymph nodes cannot be assessed
N0	No regional lymph node metastasis
N1	Metastasis in a single ipsilateral lymph node, 3 cm or less in greatest dimension
N2	Metastasis in a single ipsilateral lymph node, more than 3 cm but not more than 6 cm in greatest dimension; or in multiple ipsilateral lymph nodes, none more than 6 cm in greatest dimension; or in bilateral or contralateral lymph nodes, none more than 6 cm in greatest dimension
N2a	Metastasis in a single ipsilateral lymph node, more than 3 cm but not more than 6 cm in greatest dimension
N2b	Metastasis in multiple ipsilateral lymph nodes, none more than 6 cm in greatest dimension
N2c	Metastasis in bilateral or contralateral lymph nodes, none more than 6 cm in greatest dimension
N3	Metastasis in a lymph node, more than 6 cm in greatest dimension

Distant Metastasis (M)

M0	No distant metastasis
M1	Distant metastasis

Anatomic Stage/Prognostic Groups

Stage I	T1	N0	M0
Stage II	T2	N0	M0
Stage III	T3	N0	M0
	T1	N1	M0
	T2	N1	M0
	T3	N1	M0
Stage IVA	T4a	N0	M0
	T4a	N1	M0
	T1	N2	M0
	T2	N2	M0
	T3	N2	M0
	T4a	N2	M0
Stage IVB	T4b	Any N	M0
	Any T	N3	M0
Stage IVC	Any T	Any N	M1

Appendix XI: UoN Approval

UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
P O BOX 19676 Code 00202
Telegrams: varsity
Tel:(254-020) 2726300 Ext 44355

KNH-UON ERC
Email: uonknh_erc@uonbi.ac.ke
Website: http://www.erc.uonbi.ac.ke
Facebook: https://www.facebook.com/uonknh.erc
Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC

KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

Ref: KNH-ERC/A/70

17th February 2020

Dr. Uhenya Chumba
Reg. No.H58/88810/2016
Dept. of Surgery
School of Medicine
College of Health Sciences
University of Nairobi

KENYATTA NATIONAL HOSPITAL APPROVED 17 FEB 2020 KNH/UoN-ERC P. O. BOX 20723 - 00202 NAIROBI

Dear Dr. Chumba

RESEARCH PROPOSAL - PATTERNS OF HEAD AND NECK CANCERS AS SEEN AT THE CANCER DISEASES HOSPITAL IN LUSAKA, ZAMBIA (P893/11/2019)

This is to inform you that the KNH- UoN Ethics & Research Committee (KNH- UoN ERC) has reviewed and **approved** your above research proposal. The approval period is 17th February 2020 – 16th February 2021.

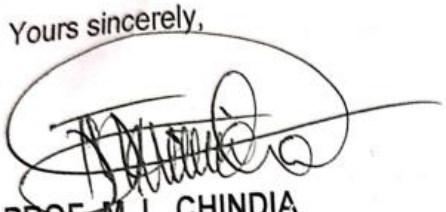
This approval is subject to compliance with the following requirements:

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. Clearance for export of biological specimens must be obtained from KNH- UoN ERC for each batch of shipment.
f. 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*).
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 Chairperson, KNH- UoN ERC
The Assistant Director, Health Information, KNH
The Dean, School of Medicine, UoN
The Chair, Dept. of Surgery, UoN
Supervisors: Dr. Peter Mugwe, Dept.of Surgery, UoN
Dr. Samuel Nyagah, Dept.of Surgery, KNH

Appendix XII: UNZABREC Approval

UNIVERSITY OF ZAMBIA
BIOMEDICAL RESEARCH ETHICS COMMITTEE

Telephone: 260-1-256067
Telegrams: UNZA, LUSAKA
Telex: UNZALU ZA 44370
Fax: + 260-1-250753
Federal Assurance No. FWA00000338

Ridgeway Campus
P.O. Box 50110
Lusaka, Zambia
E-mail: unzarec@unza.zm
IRB00001131 of IORG0000774

5th May, 2020.

Your **REF. No. 835-2020**.

Dr. Uhenya Chumba,
University of Nairobi,
Department of Ear, Nose Throat, Head and Neck Surgery,
Plot 299 Simon Mwansa Kapwepwe Road, Avondale,
Lusaka.

Dear Dr. Chumba,

RE: "PATTERNS OF HEAD AND NECK CANCERS AS SEEN AT THE CANCERS DISEASES HOSPITAL IN LUSAKA, ZAMBIA" (REF. NO. 835-2020)

The above-mentioned research proposal was presented to the Biomedical Research Ethics Committee on 5th May, 2020. The proposal is **approved**. The approval is based on the following documents that were submitted for review:

a) Study proposal
b) Questionnaires
c) Participant Consent Form

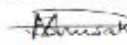
APPROVAL NUMBER : REF. 835-2020

This number should be used on all correspondence, consent forms and documents as appropriate.

- **APPROVAL DATE : 5th May 2020**
- **TYPE OF APPROVAL : Standard**
- **EXPIRATION DATE OF APPROVAL : 4th May 2021**
  After this date, this project may only continue upon renewal. For purposes of renewal, a progress report on a standard form obtainable from the UNZABREC Offices should be submitted one month before the expiration date for continuing review.
- **SERIOUS ADVERSE EVENT REPORTING**: All SAEs and any other serious challenges/problems having to do with participant welfare, participant safety and study integrity must be reported to UNZABREC within 3 working days using standard forms obtainable from UNZABREC.
- **MODIFICATIONS**: Prior UNZABREC approval using standard forms obtainable from the UNZABREC Offices is required before implementing any changes in the Protocol (including changes in the consent documents).
- **TERMINATION OF STUDY**: On termination of a study, a report must be submitted to the UNZABREC using standard forms obtainable from the UNZABREC Offices.

- **NHRA:** You are advised to obtain final study clearance and approval to conduct research in Zambia from the National Health Research Authority (NHRA) before commencing the research project.
- **QUESTIONS**: Please contact the UNZABREC on Telephone No.256067 or by e-mail on unzarec@unza.zm.
- **OTHER**: Please be reminded to send in copies of your research findings/results for our records. You're also required to submit electronic copies of your publications in peer-reviewed journals that may emanate from this study. Use the online portal: unza.rhinno.net for further submissions.

Yours sincerely,



Sody Mweetwa Munsaka, BSc., MSc., PhD
CHAIRPERSON
Tel: +260977925304
E-mail: s.munsaka@unza.zm

Appendix XIII: NHRA Approval

NATIONAL HEALTH RESEARCH AUTHORITY
Paediatric Centre of Excellence, University Teaching Hospital, P.O. Box 30075, LUSAKA
Tell: +260211 250309 | Email: znhrasec@gmail.com | www.nhra.org.zm

Date: 26th May, 2020

The Principal Investigator
Dr. Uhenya Chumba
University of Nairobi
Department of Ear, Nose, Throat, Head and Neck Surgery
Plot 299 Simon Mwansa Kapwepwe Road, Avondale
LUSAKA.

Dear Dr. Chumba,

Re: Request for Authority to Conduct Research

The National Health Research Authority is in receipt of your request for authority to conduct research titled **"PATTERNS OF HEAD AND NECK CANCERS AS SEEN AT THE CANCERS DISEASES HOSPITAL IN LUSAKA, ZAMBIA."** I wish to inform you that following submission of your request to the Authority, our review of the same and in view of the ethical clearance, this study has been **approved** on condition that:

1. The relevant Provincial and District Medical Officers where the study is being conducted are fully appraised;
2. Progress updates are provided to NHRA quarterly from the date of commencement of the study;
3. The final study report is cleared by the NHRA before any publication or dissemination within or outside the country;
4. After clearance for publication or dissemination by the NHRA, the final study report is shared with all relevant Provincial and District Directors of Health where the study was being conducted, University leadership, and all key respondents.

Yours sincerely,

Prof. Godfrey Biemba
Director/CEO
National Health Research Authority

All correspondences should be addressed to the Director/CEO National Health Research Authority

Appendix XIV: CDH Approval

All Correspondence should be addressed to the
Senior Medical Superintendent
Tel/Fax: +260 211 257706

In reply please quote:

No.: .....

MH/CDH/101/ 18/1

REPUBLIC OF ZAMBIA
MINISTRY OF HEALTH
CANCER DISEASES HOSPITAL

P.O. Box Rw 51337
LUSAKA

8th June, 2020

Dear Dr. Uhenya Chumba,

RE: - APPROVAL TO CONDUCT RESEARCH- YOURSELF (REF. NO. 835-2020)

Reference is made to the subject matter captioned above.

I wish to inform you that Cancer Diseases Hospital has no objection to your request to conduct research at our institution entitled **"The Pattern of Head and Neck Cancers as seen at the Cancer Diseases Hospital in Lusaka, Zambia".**

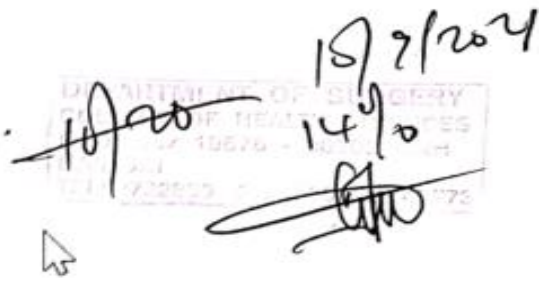
During this research, you are required to present your Identification card and after the research study is presented to your learning institution, all research findings should be shared with us in form of a report.

Kindly come with a copy of this letter during the research.

Yours sincerely,

Dr. Lewis Banda
Senior Medical Superintendent
CANCER DISEASES HOSPITAL

Appendix XV: Plagiarism Report



PATTERNS OF HEAD AND NECK CANCERS AS SEEN AT THE CANCER DISEASES HOSPITAL IN LUSAKA, ZAMBIA

by Dr. Uhenya Chumba

Submission date: 23-Mar-2021 02:40AM (UTC-0700)
Submission ID: 1540173174
File name: Dr_Uhenya_Chapter_One_to_Five.docx (422.56K)
Word count: 7421
Character count: 38252

PATTERNS OF HEAD AND NECK CANCERS AS SEEN AT THE CANCER DISEASES HOSPITAL IN LUSAKA, ZAMBIA

ORIGINALITY REPORT

14%	9%	8%	2%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	bmcresnotes.biomedcentral.com Internet Source	1%
2	Attar, E.. "Head and neck cancer in a developing country: A population-based perspective across 8years", Oral Oncology, 201008 Publication	1%
3	"EPIDUROGRAPHY: CHARACTERISTICS OF EPIDURALGRAMS PERFORMED DURING LESI", Pain Medicine, 06/2002 Publication	1%
4	Jamilah Nabukenya, Tessa A. Hadlock, Wilfred Arubaku. "Head and Neck Squamous Cell Carcinoma in Western Uganda: Disease of Uncertainty and Poor Prognosis", OTO Open, 2018 Publication	1%
5	Submitted to Aga Khan University Student Paper	1%