PATTERN OF HEADACHE AMONG PATIENTS ATTENDING AT MUHIMBILI NATIONAL HOSPITAL NEUROLOGY CLINIC-2012

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MMed (Internal Medicine) Dissertation
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PATTERN OF HEADACHE AMONG PATIENTS ATTENDING AT MUHIMBILI NATIONAL HOSPITAL NEUROLOGY CLINIC-2012

By

George Longopa

A dissertation Submitted in (partial) Fulfillment of the Requirements for Degree of Masters of Medicine (Internal Medicine) of Muhimbili University of Health and Allied Sciences

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CERTIFICATION

The undersigned certify that they has read and hereby recommend for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled *Pattern of headache among patients attending Muhimbili National Hospital Neurology Clinic-2012,* in fulfillment of requirements for the degree of Master of Medicine (Internal Medicine) of Muhimbili University of Health and Allied Sciences.

_____

Prof. WP Matuja

(Supervisor)

_____

Date

DECLARATION AND COPYRIGHT

I, **George Longopa**, declare that this **dissertation** is my own original work and that it has not been presented and will not be presented to any other university for a similar or any other degree award.

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

ACKNOWLEDGEMENT

Last but not least, I want to thank my wife, Anitha and my Daughter Stacey who showed their love and dedication throughout my study period. Their presence made a tremendous difference in my life during some tiring moments in the course of preparation and accomplishment of this dissertation.

Thanks to the Almighty God for giving me good health and power throughout my study period.

DEDICATION

This dissertation is dedicated to my lovely wife, Anitha Mushi and my daughter Stacey. It is also dedicated to my parents Mr&Mrs Longopa, who inspired me right from childhood to study hard and become a good doctor.

ABSTRACT

Introduction:

Headache or cephalalgia is pain anywhere in the region of the head or neck. It can be a symptom of a number of different conditions of the head and neck. Headache disorders are among the most common disorders of the nervous system which is associated with personal and societal burdens of pain, disability, damaged quality of life and financial cost. It is one of the most common types of recurrent pain as well as one of the most frequent symptoms in neurology.

Similar study was done in the same clinic more than twenty years ago ,However a previous study described the pattern of headache using HIS criteria and there is no new study that is known to use the new diagnostic criteria since then.

Also with recent advancements in technology together with the development of disease like HIV/AIDS lead to the development of new etiology of headache and epidemiological transition of diseases.

Objective: To establish the pattern of headache among patients in Neurology clinic at Muhimbili National Hospital (MNH).

This was a Hospital based descriptive cross sectional study among outpatients at neurology clinic at MNH. A total of 278 patients with headache were consecutively recruited from May to December 2012. A structured questionnaire was used to collect data on demographics and symptoms of headache. International classification for headache disorder volume II (ICHD-II) was used to categorize different types of headaches.

Data was entered and analyzed by using SPSS version 10. Chi-square test was used to determine the association between the different predisposing factors and different types of

headache. Student t test was used to compare means of two variables. P-value of <0.05 or less was taken as significant

Results: During the 8 months period, a total of 1440 patients attended the MNH Neurology clinic. Of these 278/1440 (19.31%) had recurrent Headache. Females were 179/278 (64.38%).Primary headache was seen in151/278 (54%) patients, of these 103/151 (37%) suffered migraine. No significant difference in gender among migraine, Cluster headache (CH) and Tensional type headache (TTH)patients. Patients aged 60 years and above who were attended suffered from Migraine were 7/11(63.3%). Anxiety 40 (37.7 %), Smoking cigarette 9(37.5%) and Depression 25 (30.1 %) were the major precipitants of Migraine type headache, Tensional type headache was associated with cigarette smoking (33.3%)   and Oral contraceptive use 25.0 %. Thirty nine patients came at neurology clinic without the referral diagnosis of headache of which 24 (61.5%) of the patient were classified as having migraine headache.

Conclusions and Recommendations

The pattern of headache was dominated by primary headache, similar to the findings of the study done 20 years ago at the same clinic. Primary headache especially migraine was common in patients 60 years of age or older. Primary headache types were highly associated with anxiety and depression.

The referral bias observed in most of the results findings necessitates the need for further studies to evaluate similar pattern in a non-specialized hospital.

TABLE OF CONTENTS

LIST OF ABREVIATION

BP	Blood Pressure
CCP	Comprehensive Chemistry Panel
CT Scan	Computed Tomogram Scan
FBP	Full Blood Picture
ICHD	International Classification of Headache Disorders
IHS	International Headache Society
MNH	Muhimbili National Hospital
MUHAS	Muhimbili University of Health AND allied Sciences
MOHSW	Ministry of Health and Social Welfare
TMJ	Temporomandibular Joint
TTH	Tensional Type Headache
UNICEF	United Nations Children's Fund
WHO	World Health Organization
ALT	Alanine Transaminase
AST	Aspartate Transaminases
S-HT	Systolic Hypertension
D-HT	Diastolic Hypertension
MMC	Muhimbili Medical Center
AHA	American Heart Association

DEFINITION OF TERMS

Primary care (PC) was defined as the first level of health care where individuals, families and communities have the 1st contact with the health care system for example dispensaries, Health facility, District hospital.

Specialized clinic was defined as a medical establishment run by a group of medical specialists for example a neurologist.

Anxiety in this study was defined as feeling of nervousness as if something is happening or might happen in the future, feeling frightened, tense and worried.

Depression in this study was defined as the state of feeling unhappy ,loss of self-esteem without hope for the future and feeling of helplessness.

Hypertension was defined as Systolic BP >140 and diastolic BP >90, Normotensive were defined as Systolic of 110-139, and Diastolic of 70-89, Hypotensive was defined as Systolic of <110 and Diastolic of <70, for an adult age 20yrs or over. Units are in mmHg-AHA

FBP results were considered abnormal when any one of the hemoglobin, white blood cell lines or platelets is above or below the normal value-Normal values for Haemoglobin is 12.6-18.1 mg/dl, Platelets 142-424 K/uL and WBC Counts is 4-11.0 K/uL.

CCP results was considered abnormal when any one of the Renal makers (Creatinine, urea, uric acid, calcium and phosphorus), and Liver enzymes (ALT, AST) is above or below the normal value. Normal values for Creatinine 80-160,Urea 3.2-7.4 mmol/L, Uric acid 0.21-0.42 mmol/L, Potassium 3.5-5.1mmol/L, Sodium 136-145 mmol/L, Billirubin Total 3.4-20.5 umol/L and Albumin 35-50g/L

HEADACHE ICHD-2 CLASSIFICATION

This based on expert consensus on the best approach to classify ,define and diagnose headache disorders. It is a recent revised criteria for this disease that has been proposed by the Headache Classification Committee of the International Headache Society. In one study to evaluate the sensitivity and specificity of ICHD-2 criteria, the diagnostic criteria ICHD-2 was shown to have high sensitivity and specificity. The ICHD-2 criteria were more operational and probably delineate a more homogeneous sample of patients than other diagnostic criterias, Also the ICHD-2 was seen to be intended equally for research and clinical practice and can be used at different levels of specialization(1)

A. Diagnostic criteria for Migraine

Migraine was diagnosed when a patient presented with the followings:-

At least 5 attacks lasting for 4-72 hours (if untreated) and the pain are sometimes severe enough to cause avoidance of routine activities such as walking, climbing stairs

With at least two of the following (Unilateral location, pulsating, moderate to severe pain intensity)

During headache attack the patient must also have at least one of the following (nausea, vomiting, photophobia or phonophobia).

B. Diagnostic criteria for Tensional type headache (TTH)

TTH was diagnosed when a patient presented with the followings:-

At least 10 episodes of headaches occurring< 1day/month (average <12days/year)

This headache must last from 30min to 7days

Also the headache must have at least two of the following;-billateral location, pressing, tightening (not pulsating)

Also the headache must not include nausea/vomiting, no photo/photophobia

Must not been attributed to another disorder

C. Diagnostic criteria for Cluster headache

Cluster headache was diagnosed when a patient presented with the followings:-

Must have at least 5 attacks of headache

Each attack must have severe or very severe unilateral orbital, supraorbital/temporal pain lasting 15-180 min if untreated

Also each headache attack must be accompanied by at least one of the following; ipsilateral nasal congest, eyelid edema, forehead& facial swell, miosis / ptosis

The headache attack must not been attributed to any other disorder

D. Diagnostic Criteria for 2° Headache

Secondary headache was diagnosed when a patient presented with the followings:-

When headache occurred in close temporal relation to the other disorder and /or there is other evidence of a causal relationship

Headache resolves within 3month after treatment or spontaneous remission of causative disorder (2)

CHAPTER ONE

1.0   INTRODUCTION

Headache or cephalalgia is pain anywhere in the region of the head or neck. It can be a symptom of a number of different conditions of the head and neck (3). Headache disorders are among the most common disorders of the nervous system which is associated with personal and societal burdens of pain, disability, damaged quality of life and financial cost. Headache has been underestimated, under-recognized and under-treated throughout the world(4).

Headache is one of the most common types of recurrent pain as well as one of the most frequent symptoms in neurology (5).Although almost everyone gets occasional headaches, there are well defined headache disorders that vary in incidence, prevalence and duration(6).

From the limited available studies in Tanzania, headache is one of the most common neurological complaints encountered by health workers (7). The data from Zimbabwe indicated that headaches were the most common problem encountered in a large survey.(8)

Over 20 % of the world's population reports migraine symptoms; 90 % of thesebegan before 40 years of age (9). The cause of Migraine headache is also not well understood but family history is suggestive of a genetic predisposition (10). The relevance of contraceptive pills in migraine causation among women has been difficult to establish(11) One study on women suffering from migraine had suggested that about one-third of women noted worsening of their headaches while taking OCs(12).

Cluster headache commonly affects adult males aged between 30-40 years and tends to disappear after age of 55(9). The cause is unclear has male predominance, however it was observed that the patients are usually heavy smokers. (13)The cause of tensional headache is incompletely understood, although emotional strain or anxiety is a common precipitant (4,10).

Tension type headache has long been regarded as a headache with muscular origins. It may be stress-related or associated with musculoskeletal problems in the neck. It has distinct sub-types. As experienced by very large numbers of people, episodic Tension type headache occurs and usually last no more than a few hours, but can persist for several days (4).

The causes of secondary headache include meningitis, brain tumors [14,18], intracranial hemorrhage, temporal arteritis, and glaucoma(14)Approximately 30% of patients with brain tumors presents with headache as a major complain for referral (15). Other causes of headache include systemic illness such as thyroiditis, inflammatory bowel diseases, and malignant hypertension(16) Others have reported headache to be associated with HIV/AIDS (17). Hydrocephalus, syphilis and secondary functional disturbances such as overwork, fatique, anaemia, gout, endocrine irregularities, obesity, intoxification and reflected pain were identified causes in another study (18).

1.2 LITERATURE REVIEW

Migraine has been found to be the common cause of headache affecting approximately 5% to 12% of the population in different countries (19).It is estimated that 324 million persons worldwide have migraine(20).Migraine is a common disease in women than males.(21)

In one study it was found that primary headaches including migraine and TTH had sex ratio Female: Male of 4:1, and the mean age was 40.7 ± 15 years, without statistical difference between sexes. (22)

A community based study done in Dar es Salaam revealed that migraine accounted for 30.8% of cases. Psychogenic precipitants of migraine headache were even rarer accounting for less than 1.2% of cases. (23).

A study on prevalence of migraine in a rural area in Southern-Tanzania used the International Headache Society (IHS) criteria to define headaches. Of the 3351 , 23.1% patients studied, with the overall prevalence of migraine at 5.0% and female: male ratio of 2.7:1 (24).

Another community based study of headache was conducted with the aim of accessing a one year prevalence of migraine headache in rural population within the catchment area of northern Tanzania and revealed the overall one year prevalence of migraine headache to be 4.3%.(7).

African community based studies in contrary to other studies in rural Tanzania found that episodic Tension type headache is the most common headache disorder, reported by over 70% of some populations. (4)

An epidemiological study at a tertiary-care centre in Brazil found the diagnosis of migrainein 37.98% of patients followed by tension-type headache (22.65%) and cluster headache with the prevalence of around 2.73% (22).

A World Bank report in the child neurology clinic in Kano, Nigeria found migraine headache to account for 5.7 percent of all new patients .(8)

A study on prevalence and characteristics of headache among HIV patients in USA found that107/200 (53.5%)patients had reported headache symptoms. The majority of headache patients reported symptoms consistent with primary headache.those who met criteria for ICHD-II diagnostic criteria , 88 (85.44%) met criteria for migraine. 15(14.56%) patients met criteria for TTH. (17).

Using the ICHD-II criteria, atemporomandibular joint and orofacial pain clinic in Korea found that 246/502 patients (49%) were diagnosed with tension-type headache (TTH), followed by migraine without aura (14.5%), probable migraine (12.9%), migraine with aura (7%), probable TTH (4.8%) and cluster headache was only (0.2%)(25).

Hospital based study done 20 years ago at MNH neurology clinic using IHS criteria found that the commonest type of headache was migraine 47 (34%) followed by non-migrainous type of primary headache 38 (27.3%) and post-traumatic headache 18(12.9%) (26)

An Epidemiological and clinical characteristics study of headache in 380 university students in Tokat, Turkey had revealed that 22.64% of the students had tension-type headache (TTH), 17.89% had migraine headache, 0.29% TTH plus migraine headache, 0.20% had cluster and variants type of headache(27).

Pathophysiology of migraine

Precise mechanisms behind the pathophysiology of migraine type of headache remain unclear. The traditional theory of migraine (the once popular vascular theory of migraine), suggested that there is considerable evidence that intracranial vasodilatation occurring in response to neurological events of migraine is thought to be the cause(28).

It is proposed that there is abnormality in the brain stem sensory information modulation (29). It is also proposed early in the attacks VASOACTIVE PEPTIDES are released from primary

sensory nerve terminals. These peptides activate inflammation of the meninges, perivascular dilatation and extravasation. First order neurone terminated in the trigeminal nucleus caudalisin the brainstem. Second order neurone ascend to the thalamus, third order neurone project to the corticalcenters (29)

At baseline, a migraineur who is not having any headache has a state of neuronal hyperexcitability in the cerebral cortex, especially in the occipital cortex. This finding has been demonstrated in studies of transcranial magnetic stimulation and with functional MRI (31).This observation explains the special susceptibility of the migraineur with an aura to headaches. There is evidence that aura is caused by cortical spreading depression,a transient spreading disturbances of cortical functions (32).This hypothesis is supported by other studies to be related to hyperexcitability of the cerebral cortex and/or abnormal control of pain neurons in the trigeminal nucleus of the brainstem(33)

Pathophysiology of Cluster headache (CH)

The pathophysiology of cluster headacheis not completely understood (34,35),although the Positron-emission tomography has shown activation of the homolateral posterior inferior hypothalamic gray matter during attacks of cluster headaches, a finding that is apparently specific to the condition and voxel-based morphometric magnetic resonance imaging (MRI) has documented alteration of the same area, suggesting that cluster headache may be initiated in this area(36).It has been a subject of considerable research interest in recent years, with several major advances, in the areas of pain, autonomic symptoms and periodicity.

In the area of pain and autonomic signs, one investigation with Cluster Headache found that increased level of calcitonin gene related peptide in the jugular vein reflected trigeminovascular activation, while increased level of vasoactive intestinal peptide reflected cranial parasympathetic activation (37)

The periodicity of the attacks in CH suggests the involvement of a biological clock within the hypothalamus, with central disinhibition of the nociceptive and autonomic pathways specifically the trigeminal nociceptive pathways. The posterior hypothalamic grey matter has been identified as the key area for the basic defect in CH by neuroimaging with positron emission tomography (PET) and anatomical imaging with voxel-based morphometry(34)

Furthermore, altered habituation patterns and changes were observed within the trigeminal-facial neuronal circuitry secondary to central sensitization, in addition to dysfunction of the serotonergic raphe nuclei-hypothalamic pathways. More recently, functional hypothalamic dysfunction has recently been confirmed by abnormal metabolism based on the N-acetylaspartate neuronal marker in magnetic resonance spectroscopy (38).

This is supported by studies based on the clinical features of the disorder, three areas appear to be involved in the pathogenesis and the expression of cluster headache: the trigeminal nociceptive pathways, the autonomic system and the hypothalamus. A brain stem connection may exist between the trigeminal nerve and the cranial parasympathetics. This would explain the reflex trigeminal-autonomic activation but a central nervous system dysfunction located in posterior hypothalamic gray matter is probably pivotal in the process (39).

Pathophysiology of Tensional type headache (TTH)

Precise mechanism of TTH is not known but recent studies of nitric oxide (NO) mechanisms suggest that NO may play a key role in the pathophysiology of TTH. Nitric oxide (NO) appears to be an important molecule involved in regulation of cerebral and extracerebral blood flow, regulation or arterial diameter, and nociceptive signaling possibly linked to release of calcitonin gene–related peptide (CGRP) .It was   suggested that NO-related central sensitization may be an important common denominator in pain mechanisms of TTH (40)

Nociception from myofascial tissues is considered important in TTH, the role of a peripheral mechanism as an inciting factor is not clearly known, and certainly central factors are important for TTH because general hypersensitivity to pain stimuli has been demonstrated (41)

Previous reports of sensitization of the central nervous system in patients with chronic tension-type headache were confirmed by the findings of generalized pain hypersensitivity both in skin and in muscles, and of a decrease in the volume of gray matter in brain structures (42)

1.2.1 Diagnosis algorithm

A patient may present for care of headache during an attack or during a headache free period, if a patient present during headache, appropriate evaluation(history, examination, appropriate testing)needs to be in a timely fashion. Once the diagnosis of primary headache is made acute treatment is instituted. If the patient has a history of recurrent headache a plan for treatment (acute and prophylaxis) need to be established.Minimal general examination is performed at first consultation of patients presenting with headache (2).

Headache can be diagnosed by symptoms and signs with the use of criteria. The International classification of headache disorders, second edition (ICHD-II) system provides the gold standard as empirical evidence and clinical experience accumulate, criteria for diagnosing headache (43).

1.3 PROBLEM STATEMENT

Headache is cited as one of the common neurological manifestations. In Tanzania a community-based study found that 41.2% of older people with neurological disorders complained of headache(44)Another study found that prevalence of headache was 12% using the International Headache Society (HIS) criteria (7)The magnitude is likely to be high in hospital settings albeit little is known on the magnitude due to paucity of information. With the introduction of new ICDH-II the burden and distribution of headache is likely to change but we do not know how and for how much.

Headache remains one of the conditions which etiology is often misdiagnosed. Misclassification of headache types could potentially lead to mis-treatment, improper management of the disease, and inappropriate referrals and unnecessary costs both to the patient and the health system. It is critical to quantify and appropriately characterize headache to enable rational management of diseases associated with Headache.

1.4 Rationale

Headache is an under-recognized, under-discussed, and commonly untreated, but it is also one of the most preventable conditions if the causes are easily identified. It constitutes a major public health problem, influencing the patient's wellbeing and quality of life. It also leads to psychological, social, and physical morbidity.

Different types of headache are often undiagnosed unless the healthcare provider specifically asks the patient about possible symptoms. At present, Tanzania has no national guidelines to ensure that patients with headache complaints are asked to look for different kinds of headache at clinic visits.

Little is known in Tanzania regarding the pattern of headache as are few hospital based studies has been done and published regarding the patterns and distribution of headache . Similar study was done in the same clinic twenty years ago ,time has passed and due to the developments of new etiology of headache disordes there is a need to know the current pattern and distribution . It is therefore important to know the pattern as this will influence the policy makers for prioritization in headache especially in a resource scarce country like Tanzania.

To understand the pattern and causes will help in determining and planning the prevention strategies.

This calls for studies in the pattern of headache among patient attending neurology clinic at MNH. The study findings could also help to be the basis for future headache research.

1.5 OBJECTIVES

1.5.1 BROAD OBJECTIVE

To establish the pattern of headache among patients attending neurology clinic at Muhimbili National Hospital 2012

1.5.2 SPECIFIC OBJECTIVES

1. To determine different types of headache among patients in Neurology clinic at MNH
2. To determine the association between the different types of headache in relation to demographic characteristics

3. To describe the associated factors of headache among patients in Neurology clinic at MNH

4. To compare the referral diagnosis and the diagnosis according to ICHD-II

CHAPTER TWO

2.0 METHODOLOGY

2.1 Study design

This was a Hospital based descriptive cross sectional study

2.2 Study site

The study took place at the MNH Neurology clinic in Dar-es-Salaam, MNH was chosen because its neurology clinic receives referred patient not only from District Hospitals but also from hospitals throughout Tanzania. Dar es Salaam is located at $6^0 48$' East and is an administrative province within Tanzania, it has three local government areas or administrative districts: Kinondoni (North), Ilala (center) and Temeke (South) of the region. According to the 2002 National census, this region had a population of 2,497,940.

2.3 Study population

All patients presented with headache as their main presenting complain at MNH Neurology clinic from May to December 2012.

2.4 Sampling and Sample size

The sample size was obtained using Kish and Leslie formula

2.5 Sampling and Sample size

 The minimum sample size of this study was calculated using the following formula

$$n = \frac{Z^2 p(1-p)}{d^2} (44)$$

Where; Z = score for 95% confidence interval = 1.96

    p = prevalence 23.7%* (W.B Matuja et al 2004,in a community based study of

headache in a non clinical population in Dar es salaam,Tanzania)(23)

    d=tolerable error = 5%

    n = 1.96 x 1.96 x 0.237 (1-0.237)

$$(0.05)^2$$

$n \approx 278$

Study sample=278

2.6 Sampling technique

Patients were recruited consecutively. Attending physicians in the clinic were involved in patients' recruitment whereby they were instructed to channel all patients with headache to the investigator.

2.7 Inclusion criteria

1. Patients with headache attending Neurology clinic at MNH OPD
2. All individuals who are capable of providing correct and reliable information on the characteristics of headache (patients aged 15 years and above, For those 15-17 years seeking consent from parents/guardian)
3. Consent to take part in the study

2.8 Exclusion criterion

Individuals with associated cognitive impairments

2.9 Data collection procedure

A structured questionnaire was used by the author to obtain the patient's information on demographics and record various symptoms related to headache, its duration, mode of onset, and site of the ache.

2.10 Procedures

- All consenting individuals were interviewed by the investigator. Personal particulars, history and physical examination were done and the details filled into the structured questionnaire.
- Subjects were recruited on clinic days on Mondays and Tuesdays.

2.10.1 Focused physical examination

- Vital signs (BP,PR,RR, Temperature)

- Extracranial structure evaluation such as listening for bruit at neck, eyes, and head: AV malformation, tenderness over frontal and/or maxillary sinuses: consider sinusitis, scalp for arteritis, palpation of head and neck for tenderness: paraspinal muscle tenderness/tension headache
- Examination of the neck in flexion versus lateral rotation for meningeal irritation

2.10.2 Focus neurological examination

Cognition and Cranial Nerves, neck, long tracts signs(motor and sensory functions) examination were done

2.10.3 Lab Investigations; included

- Full blood count
- Comprehensive chemistry panel (which include serum electrolytes, Blood urea levels)
- Only the number of frequency of occurrence of abnormal laboratory and radiological results were used to show the association between variables.
- CT-Scan (for selected cases-in patients with abnormal Neurological findings and investigations)
- There are no clear guidelines for the use of CT for the investigation of headache, clinicians makes selective use of CT scans based on a combination of factors that included physician and patient concerns.(45)In one study, most of CT Scan positive results represented false positives or incidental findings that could have led to adverse effects and additional costs. Although in one headache study only headache patients with abnormal CNS examination (46) were subjected into CT Scan like the current study.

2.11 Disposal of the patients

The PI confirmed the diagnosis by the authority from the supervisor who is also a neurologist and all patients whose classification of the type of headache was in doubt were sent to the neurologist for discussion and final classification and the treatment was offered accordingly.

2.12 Ethical consideration:

Ethical clearance to conduct the study was sought from Muhimbili University of Health and Allied Sciences Ethical Review Board. Permission to do the study was obtained from the Hospital management. Each participant was requested to provide consent before enrollment into the study.

2.13 Data entry, cleaning and analysis:

Collected data was checked for completeness and consistency, and errors or discrepancies found were promptly corrected. Investigator. The study investigator checked data entered into the computer using EPI info version 6, and data errors.

Data analysis performed using SPSS version 10. Chi-square test and multivariate analysis was used to determine the association between the study variables. Student t test used to compare means of two variables. P-value of <0.05 or less was taken as significant.

CHAPTER THREE

3.0 RESULTS

During the seven-month study period, 1440 patients attended the MNH Neurology clinic. Out of these 278/1440 (19.31%) had headache related symptoms and were recruited in this study. Almost two-third of the participants, 179/278 (64.38%) were females. In both sexes majority (73.7%) of the patients were younger than 46 years of age. Majority of the patients (66%) attained secondary or college education, more females (33.3%) having attained college education than males (17.3%), p value 0.021. Few (16.5%) patients with headache were businessmen while the rest of the categories of occupation were having comparable percentages of patients. More females were students (33.3%) or employed (30.3%) than were males, 25.1% and 26.3% respectively (Table 1).

Table 1: **Demographic characteristics of the patients in relation to sex N=278**

Characteristic	Total (%)	Male (%)	Female (%)	P-value
Age Groups				
15-30	103(37.0)	42 (42.4%)	61(34.1%)	
31-45	102 (36.7)	29 (29.3%)	73(40.8%)	
46-60	62 (22.3)	26 (26.3%)	36 (20.1%)	
>60	11 (4.0)	2 (2.6%)	9 (5.0%)	0.112
Marital Status				
Single	96 (34.5)	37 (37.4%)	59 (33.0%)	
Married/Cohabiting	146 (52.5)	50 (50.5%)	96 (53.6%)	
Separated/Divorced /Widowed	36 (12.9)	12(12.1%)	24 (13.4%)	0.773
Education level				
None	21 (7.6)	7 (7.8%)	14 (7.1%)	
Primary	72 (25.9)	24 (26.8%)	48 (24.2%)	
Secondary	121(43.5)	35 (48.0%)	86 (35.4%)	
College/ University	64 (23.0)	33 (17.3%)	31 (33.3%)	**0.021**
Employment Status				
Student	78 (28.1)	33 (25.1%)	45 (33.3%)	
Employed	77 (27.7)	30 (26.3%)	47 (30.3%)	
Businessmen	46 (16.5)	16 (16.8%)	30 (16.2%)	
Others	77 (27.7)	20 (31.8%)	57 (20.2%)	0.171

Figure 1; Primary headache (migraine, TTH(Tensional type headache) and cluster headache) was the most common type of headache accounting for 54% (151/278) of patients. Of the patients with primary headache, 103/151 (68.2%) had migraine, (39/151)10% had TTH and 9/151 (4.6%) had cluster headache. .
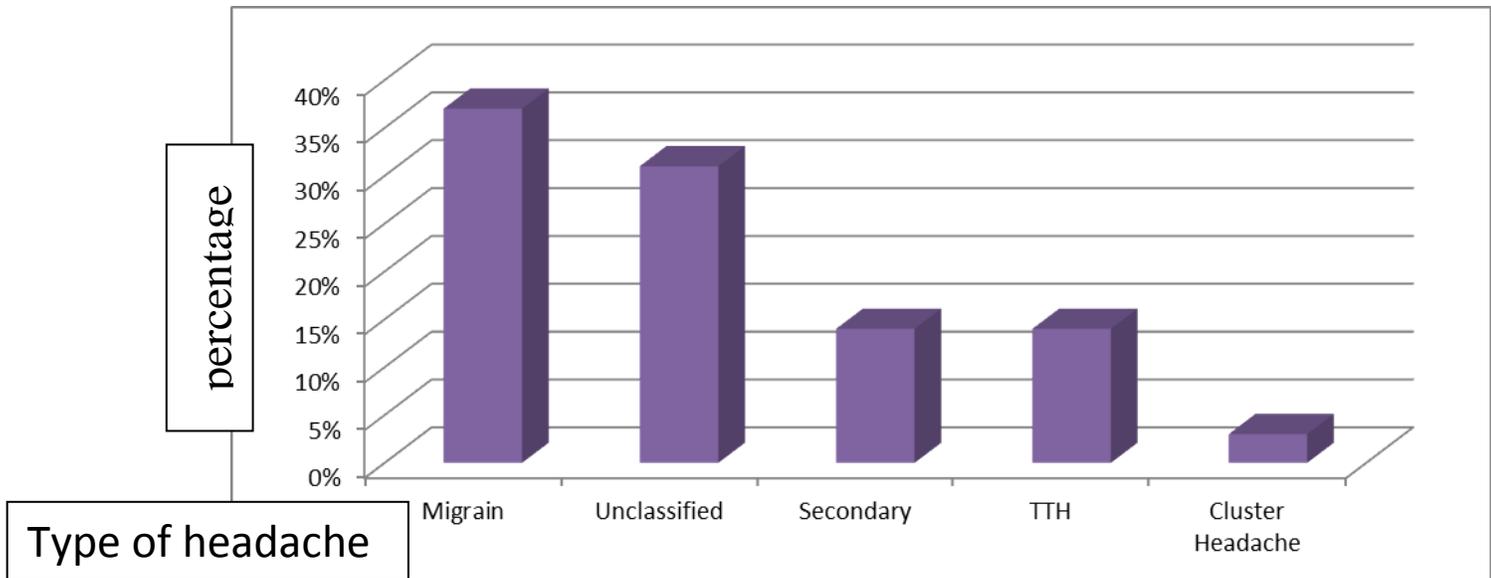
Figure1: Distribution of types of headache among patients in MNH Neurology clinic.
N=278

Table 2: No association was found between socio demographic characteristics and migraine, except the patients aged 60 years or older had a tendency towards suffering migraine 7/11 (63.3%) than other migraine age groups.

Eleven out of 36 (30.6%) of patient with TTH were either separated , divorced or widowed, this was statistically significant from other types of headache, p value=0.006.

Cluster headache was common in students 5/78 (6.4%) and employed people 4/77 (5.2%), p value=0.0042. Secondary headache affected more people aged 60 or order (27.3%), p value=0.002, married or cohabiting patients 26/146 (17.8%), p value<0.001, people with primary level of education 20/72 (27.8%), p value=0.02 and people with occupation other than petty trader, student or employed, p value<0.001.

Table 2: Association between types of headache and socio-demographic characteristics

Headache type											
		Migraine N= 103		TTH N = 39		Cluster headache N=9		Secondary headache N=40		Unclassified headache N=87	
Characteristic	Total Number	Number (%)	P value	Number (%)	P value	Number (%)	P value	Number (%)	P value	Number (%)	P value
Gender											
Male	99	38 (38.4)		18 (18.2)		2 (2.0)		16 (16.2)		25(25.3)	
Female	179	65 (36.3)	0.796	21 (11.7)	0.151	7 (3.9)	0.498	24 (13.4)	0.541	62 (34.6)	0.137
Age groups (years)											
15-30	103	31 (30.1)		13 (12.6)		5 (4.9)		17 (16.5)		37 (35.9)	
31-45	102	39 (38.2)		15 (14.7)		3 (2.9)		6 (5.9)		33 (32.4)	
46-60	62	26 (41.9)		10 (16.1)		1 (1.6)		8 (12.9)		17 (27.4)	
>60	11	7 (63.6)	0.104	1 (9.1)	0.862	0 (0.0)	0.651	3 (27.3)	0.002	0 (0.0)	0.067
Marital status											
Single	96	29(30.2)		9(9.4)		4 (4.2)		14 (14.6)		40 (41.7)	
Married/Cohabiting	146	62(42.5)		19(13.0)		4 (2.7)		26 (17.8)		35 (28.5)	
Separated/Divorced/ Widowed	36	12(33.3)	0.141	11(30.6)	**0.006**	1 (2.8)	0.889	0 (0.0)	***0.000**	13 (13.9)	***0.006**
Education Level											
None	21	10 (47.6)		4(19.0)		0 (0.0)		4 (19.0)		3 (14.3)	
Primary	72	24 (33.3)		8 (11.1)		0 (0.0)		20 (27.8)		20 (27.8)	
Secondary	121	46 (38.0)		19 (15.7)		8 (6.6)		10 (8.3)		38 (31.4)	
Post-secondary	64	23 (35.9)	0.685	8 (12.5)	0.728	1 (1.6)	0.058	6 (9.4)	**0.002**	26 (40.6)	*0.125
Occupation											
Student	78	25 (32.1)		11 (14.1)		5 (6.4)		13 (16.7)		24 (30.8)	
Employed	77	26 (33.8)		7 (9.1)		4 (5.2)		4 (5.2)		36 (46.8)	
Petty- trader	46	23 (50.0)		6 (13.0)		0 (0.0)		5 (10.9)		12 (26.1)	
Others	77	29 (37.7)	0.213	15 (19.5)	0.322	0 (0.0)	*0.042	18 (23.4)	**0.000**	15 (19.5)	***0.003**

*The p-value extracted from fischer exact test instead of chi-square

Table 3 Anxiety 40/106 (37.7 %), cigarette smoking 9/24(37.5%) and Depression 25/83 (30.1 %) were the major precipitants of migraine headache. Precipitants for tensional type headache (TTH) were cigarette smoking 8/24 (33.3%) (p-value 0.013) and oral contraceptive use 6/24 (25.0 %) (p-value 0.027).

In Cluster headache being depressed and smoking cigarette symptoms were not present among the precipitants. Miscellaneous (Flashlights, exercise, eating chocolate, missing a meal, fatigue or alcoholic beverages) was seen as the major precipitant in secondary headache 31/97(32%), followed by the Depression.

Among patients who were unclassified, anxiety 35 (33.0%) was the major precipitants. Majority of the headache patients who admitted to have used the oral contraceptives had unclassified type of headache 7 (29.2%) followed by secondary headache sufferers as shown in Table 3 below.

Table 3: Precipitants for different types of Headache among patients in MNH Neurology clinic (N=278)

	Headache type					Total
Precipitants	**Migraine (%)**	**TTH (%)**	**CH (%)**	**Secondary Headache (%)**	**Unclassified (%)**	**N (%)**
Anxiety	40(37.7)	7 (6.6)	4(3.8)	20(18.9)	35(33.0)	106 (100)
Depression	25(30.1)	9(10.8)	0(0.0)	23(27.7.4)	26(31.3)	83(100)
Oral contraceptives	4(16.7)	6(25.0)	1(4.2)	6(25.0)	7(29.2)	24(100)
Smoking	9(37.5)	8(33.3)	0(0.0)	2(8.3)	5(20.8)	24(100)
*Miscellaneous	24(24.7)	14(14.4)	4(4.1)	31(32.0)	24(24.7)	97(100)

*Miscellaneous involve Flashlights, exercise, eating chocolate, missing a meal, fatigue, alcoholic beverages.

Table 4 : More than half (53.7%) of the patients referred with a diagnosis of migraine were having unclassified headaches as could not be classified to any headache type by the ICHD-II classification, while 39% of them were diagnosed with migraine by classification. Those referred with TTH 52.2% were actually having migraine while 34.8% were unclassified. Those with referral diagnosis of cluster headache were diagnosed with migraine (47.4%), and unclassified headache (42.1%). Only 19.5% of those referred with secondary headache actually had secondary headache. Of the 39 referred patients without known cause of their headaches, 24/39 (61.5%) had migraine, 20.5% had TTH and 10.3% had secondary headache (Table 4)

Table 4: Comparison between referral Diagnosis and ICHD-II Diagnosis in Headache patients in MNH Neurology clinic (N=278)

	ICHD-II Diagnosis					
Referral Diagnosis	Total Number (%)	Migraine Number (%)	TTH Number (%)	CH Number (%)	Secondary Headache Number (%)	Unclassified Headache Number
Migraine	41(100)	**16(39.0)**	1(2.4)	1(2.4)	1(2.4)	**22(53.7)**
TTH	23(100)	**12(52.2)**	1(4.3)	0(0.0)	2(8.6)	**8(34.8)**
CH	19 (100)	**9(47.4)**	1(5.3)	0(0.0)	3(15.8)	**8(42.1)**
Secondary Headache	154 (100)	42(27.3)	28(18.2)	7(4.5)	**30(19.5)**	47(30.5)
Unclassified headache	39 (100)	**24(61.5)**	**8(20.5)**	1(2.6)	4(10.3)	2(5.2)
Total	278 (100)	103(37.0)	39(14.0)	9(3.2)	40(14.4)	87(31.3)

Table 5: Out of 9 patients who underwent CT Scan Examination 8(88.9%) had abnormal findings, Patients with secondary Headache were more likely to present with abnormal CCP (33.3%) P- value 0.008, abnormal systolic blood pressure (16.0%), p vale 0.005 and abnormal CT- Scan 4/8 (50.0%.) P- value 0.012. Cluster headache significantly showed abnormalities in systolic blood pressure in P value 0.024. Other type of headache had no association with abnormal investigation

Note; Patients with secondary headache who had abnormal CT-Scan results 2 presented with intracranial mass due to cerebrovascular events, and two of them had a mass suspected to be a tumors.

A patient who had TTH and presented with abnormal CT-Scan results presented with features of an old infarct while a patient with migraine who had abnormal CT-Scan results presented with nonspecific features on CT-Scan.

Table 5: Relationship between different types of headache and Laboratory and Radiological investigations among Patients with headache in MNH neurology clinic

Type of headache

Parameter	Total N	Number with abnormality N (%)	Migraine n/N (%)	P value	TTH n/N (%)	P value	CH n/N (%)	P value	Secondary headache n/N (%)	P value	Unclassified headache n/N (%)	P value
FBP	278	30 (10.8)	13 (43.3)	0.549	4 (13.3)	0.574	1(3.3)	0.102	2(6.7)	0.529	10 (33.0)	0.836
CCP	278	21 (7.6)	7 (33.3)	0.817	3 (14.3)	0.335	0 (0.0)	0.630	7 (33.3)	0.008	4 (19.0)	0.234
S-HT	278	75 (27.0)	21(28.0)	0.175	15 (20.0)	0.242	6 (8.0)	0.024	12 (16.0)	*0.005	21(28.0)	0.116
D-HT	278	34 (12.0)	11(32.4)	0.490	3 (8.8)	0.731	1(2.9)	0.887	9(26.5)	0.131	10(29.4)	1.00
CT-Scan	9	8 (88.9)	1 (12.5)	1.000	2 (25)	1.000	1(12.5)	1.00	4 (50.0)	*0.012	0 (0.0)	

*p-value extracted from fisher's exact test
CCP-Comprehensive chemistry panel(liver profile, renal profile and serum electrolytes)
S-HT-Systolic hypertension
D-HT-Diastolic hypertension
FBP-Full blood picture(Blood cell lines)

CHAPTER FOUR

4.0 DISCUSSION

4.1 Summary of the study findings

During the 8 months period, a total of 1440 patients attended the MNH Neurology clinic. Of these 278/1440 (19.31%) had Headache and were recruited in this study. Females were 179/278 (64.38%).Primary headache was seen in151/278 (54%) patients, of these 103/151 (37%) suffered migraine. No significant difference in gender among migraine, Cluster headache (CH) and Tensional type headache (TTH) patients. Patients aged 60 years and above who were attended suffered from migraine 7/11 (63.6%). Anxiety 40 (37.7 %), Smoking cigarette 9(37.5%) and Depression 25 (30.1 %) were the major precipitants of Migraine type headache, Tensional type headache the precipitants were cigarette smoking (33.3%)   and Oral contraceptive use 25.0 %. Thirty nine patients came at neurology clinic without the referral diagnosis of headache of which 24 (61.5%) of the patient were classified as having migraine headache.

4.2: Different types of headache in relation to demographic characteristics

This study found that majority of headache sufferers were the young adults being less than 46 years of age. This finding was similar to another study done twenty years ago at Muhimbili Medical Center, which found that age groups 15-34 years and 40-44 years suffer more from headache (26).

In this current study over two-third of the participants, (n=179, 64.38%) were female. This shows a different pattern from the population-based study in Dar es Salaam, in which men were more affected than females. The reason could be that for the same health related problem women tend to seek more consultation than men (23). Also the difference in methodology may explain the difference.

4.2.1 Migraine

In the study done 20 years ago at MMC it was found that migraine was the commonest type of headache reported with 47(34%) patients (26). This was similar to the current study findings whereby the occurrence of migraine headache was seen among 103 (37%) with migraine being the commonest type of headache reported. This similarity might be explained by the facts that the same study area was used, however these results must be taken with cautious since in the study done 20 years ago different diagnostic criteria for migraine was used.

In this study no significant difference was observed in terms of gender percentages among migraine patients i.e. male and females, 38(38.4%) and 65(36.3 %) respectively. These findings were in contrast with a study , which was done in MMC Dar es Salaam, Tanzania neurology clinic in 1991. It was found that migraine headache was common in males with M: F ratio 2.3:1 (26). This might be explained by the fact that in the current study the proportional of educated males is almost similar to that of educated females, therefore the tendency towards the health seeking behaviors' is almost the same in both sexes.

The results from this current study were different from the results obtained from another study that was done among Sub-Saharan African Adults which found that among participants who fulfilled criteria for migraine had a higher frequency among women (14.3%, 95% CI 11.9-16.6) than men (6.9%, 95% CI 5.5-8.3) was observed (47). This difference between these two studies can be explained etiologically. In this current study majority of migraine sufferers were married individuals, and the most precipitants of migraine was found to be anxiety and depression, This was supported by the study which tried to analyze the social benefits of marriage which included the protective social support during times of stress (56), therefore being married majority of migraine sufferers participants were stress free hence the same proportional of migraine among males and females was observed.

Furthermore, different results from the current study were obtained in a study of an outpatient headache clinic at a tertiary hospital in Valladolid, Spain where by women/men ratio was

found to be 2.46/1(48). This difference in results findings might be explained by having the same proportion of educated and non-educated individuals among males and females migraine sufferers in this current study. By being educated increases the awareness towards health seeking behaviors in both sexes in the same proportion.

In this study it was observed that patients aged 60 years and above had suffered from Migraine 7(63.3 %) more than any other headache types. These results are different from the study which was done in Brazil which showed that elderly patients in general and individuals with headache having started after 60 years of age presented a higher ratio of secondary headaches (49). The recall biased might cause this difference since in this current study, the age of a patient was only reported verbally and there were no any evidence provided to validate the age of an individual.

A systematic review of 19 studies showed that high-income earners had a lower prevalence of headache (50). The current study showed the migraine to be in participants who had informal education 10(47.6 %) and among petty-trader 23(50%). This result are similar to one large cohort study of female health professionals in Havards school whereby low socioeconomic status (SES) was associated with an increased prevalence for all headache forms and an increased migraine attack frequency(51). The mechanisms by which low education profile and being a petty-trader might be related to migraine prevalence and migraine frequency are unclear. Stress linked to economic hardship and working conditions, diverse diet patterns and different access to medical care may influence this association. Furthermore, the direction of the association still has to be determined. However in the Havard study socio-economic index was estimated using annual household income and education while this current study the socioeconomic status was estimated using the type of employment and education.

4.2.2 Tensional type headache

In this study Tensional type headache was seen among 39 (14%) of all the patients reported to have headache. This is in contrast to the study done in Kenya among medical students at

Nairobi University. Of the 711 students surveyed admitted having headache in the last six months. Using the IHS case criteria TTH was the commonest type of headache with 314 (50%) students (52). The discrepancies in these two studies results might have been attributed to differences in methodology including sample size estimates, usage of the ICHD-II versus other diagnostic criteria, and interview types.

No statistical difference was observed within tensional type headache individuals in terms of gender in this study although male were slightly affected than females. Among 99 males with headache 18 (18.2%) suffered TTH while among 179 female patients 21(11.7%) suffered TTH. These findings were different from one TTH study that was done in Norway, which showed that women were only slightly more affected than male (the female-to-male ratio of TTH is 5:4) (53). The very slightly different noted which is similar to the current study in which males were 18(46.2%) and females 21(53.8%). The same reason that female has the high tendency towards health seeking behavior among females than males in both Norway and Tanzania can explain the similarity.

In this study it was shown that TTH were common among patient aging between 46 to 60 years of age. In contrary to the a study done in Norway where by the peak prevalence occurs within the young adults aging between 30 to 39 and decreases slightly with age (53). This difference can be explained by the reason that in this study and other previously reported studies Tensional headache was seems to be associated with oral contraceptives use, Oral contraceptive contain compositions of hormones like oestrogen and progesterone which are also the main contituents of hormonal replacements therapy among elderly females. This age group includes women who just attained postmenopausal period who are using hormonal replacement therapy. Therefore this might probably explain the discrepancy seen.

Most of Tensional type headache patients were either separated, divorced or widowed individuals 11(30.6) % (p-value=0.006). Being divorced, separated or widowed, these patients might present with neuropsychiatric behaviors such as anxiety, depression that might as well precipitate tensional type headache to this patients.

In this study it was shown that education level and employment status had no influence on the occurrence of TTH. These results were different to other studies which were conducted .In a study which was done in USA which showed that s a constant TTH diagnosis to be related to a higher level of education (54). The difference observed may be contributed by the fact that USA is a developed country with much predisposing factors which can be important confounders in contrast to our study.

4.2.3 Secondary headache

In a study which was done in Brazil showed that Elderly patients in general and individuals with headache having started after 60 years of age presented a higher ratio of secondary headaches than the young subjects and the ones whose pain started before 60 years of age (49). Similarly in the current study among patients who had secondary headache the age group of 60 years and above comprised a highest proportional of individual suffered TTH 3(27.3%) (p-value = 0.002). The etiological agents of secondary headache in elderly like hypertension, epilepsy, HIV, brain tumors are universal and can be found in both countries, this can explain the similarity noted.

4.4 The associated factors of headache among patients attending at Neurology clinic at MNH

4.4.1 Headache types and Depression/Anxiety

In this study, Anxiety 40 (37.7 %) and depression 25 (30.1 %) were associated with Migraine. Similar results was obtained in a community based study done in Dar es Salaam which revealed that 34% of the individuals had migraine, 27% had psychogenic (mostly anxiety and depression) disorders (23). These findings are similar to a study, which was done in Brazil and USA which reveals that patients with migraine had a much greater overall likelihood of abnormal behavioral score, especially in anxiety-depressive disorders. However, patients with TTH were affected in the same domains as migraine sufferers (55),

Anxiety feeling was also seen to be associated with the occurrence of Cluster headache. Nevertheless, Cluster headache had a number of participants who were separated, divorced or widowed; therefore the association of having Anxiety after being divorced or left widowed might have contributed these significant findings in this study.

4.4.2 Headache types and Oral contraceptives

In this study only migraine headache was not evident to be associated with the OC use as only 4(16.7%) migraine sufferers admitted to have used OC's. These results were similar from the other study which was done directly to evaluate the effects of oral contraceptive (OC) use on migraine headache frequency. The Benson Study in 1986 was unable to demonstrate a higher frequency of migraine headache in OC users discharged from the hospital as compared with non-users (12). However in the current study part of the analysis involved males in the denominator while the above studies involved only females therefore these interpretations must be taken with caution.

In this current study majority of the headache patients who admitted to have used the oral contraceptives had mostly unclassified headache 7 (29.2%) followed by TTH.

4.4.3 Headache types and Smoking cigarette

In this study Smoking cigarette 9(37.5%) was observed as a precipitants among Migraine patients and tensional type headache patients 8(33.3%).

Similar to the study conducted in Spain which showed that cigarette smoking can act as a precipitating factor for headaches, specifically migraines. It was found that the percentage of migraine patients who smoked was greater (29%) and migraine frequency in those who were

both migraine sufferers and smokers was higher than in those who were nonsmoking migraine sufferers (56).

In the present study miscellaneous predisposing 41(41.8%) which included (Exercise, flashlights) was seen the major factors in secondary headache followed by the Depression. This could be explained by the etiological agents of some of the secondary headache like association of flashlights and epilepsy, while epilepsy is also a common cause of secondary headache.

4.5 The referral diagnosis (clinical diagnosis) and the diagnosis according to ICHD-II

Referral diagnosis were wrong in majority of patients. The diagnosis of migraine seem to be a problem in low level health care facilities as majority of those diagnosed with migraine at MNH were referred as having unclassified headache i.e no cause was identified. This was similar to a study, which was done in German Using the same criteria; it showed that there was increased reproducibility of migraine diagnosis from 48.0% to 62.0% and of TTH from 59.0% to 65.0% when this criterion was used. (57). In developed country like German with improved primary care facilities and increased number of neurologists than Tanzania it was expected to have proper diagnosing tools from the primary care level, however it gave the same picture. Nevertheless these findings still drive us into training on the proper diagnosing headache disorders in all the health care levels .

4.6 Headache types and investigations

With exception of secondary headache, abnormal investigation did not show significant association with primary types of headache. This is because most of secondary headache causes are known and they can be picked up easily by investigations like a tumor by CT scan or electrolytes imbalance by the serum electrolytes levels.

This study found secondary headache to have the majority of patients with abnormal CCP results. systolic hypertension and CT Scan. This findings are similar to Trondheim study,

which reported that significant factor affecting secondary headaches was found to be mainly the systolic blood pressure reading (58).

Among headache patients who had abnormal neurological findings and were eligible for CT-Scan (8 patients), secondary headache had the highest number of patients who had 50% abnormal CT-Scan findings (P-value=0.012).

This findings were similar from the evidence-based guideline developed by the U.S. Headache Consortium for the use of neuroimaging in patients with non-acute headache which stated that neuroimaging should not be warranted in patients with migraine and a normal neurologic examination because insufficient information is usually available (59), as we have also seen in this study little information was obtained from CT scan on primary headache .

Similar results were reported in 623 patients receiving the CT-Scans to find a potential cause of headache, only one in every 50 scans or about two per cent showed something that could be triggering the pain (60).

This similarity can be explained by the fact the causes of most types of headache worldwide are still unknown, only the precipitants such as anxiety, depression and smoking have been speculated, of which cannot produce any significant radiological findings except for secondary headache radiological findings like stroke features, intracranial tumors can be seen..

CHAPTER FIVE

5.0 CONCLUSSION AND RECOMENDATION

5.1 CONCLUSSION

The pattern of headache was dominated by primary headache than secondary type of headache. Similar to the findings of the study done in the same clinic twenty years ago. Patients aged 60 years and above seems to suffer from primary headache. Anxiety and depression was seems to be associated with Migraine and Tensional type headache. The study further showed diagnosing primary headache types in low level facilities seem to be a problem as majority of those who came without a referral diagnosis were diagnosed to have migraine at MNH . This comparison were not done in a study 20 years ago .

5.2 RECOMMENDATION

Some of these findings are similar to findings found in other studies done in different countries.

1.The proper criteria for diagnosing headache disorders should be adopted in all levels of health care since it was seems that if it is used in the diagnosis of headache from the primary care units it increase the diagnostic accuracy.

2.The referral bias observed in most of the results findings necessitates the need for further studies to evaluate similar pattern in a non-specialized hospital like a health center or a district hospital to see the pattern in a non-specialized center.

3.Also The high frequency of psychoneurotic disorders in primary headache emphasizing the need for psychiatric training at almost all levels of health personnel in Tanzania for primary prevention as well as to pick up these disorders for better treatments options.

5.3 STUDY STRENGTH

In study, the PI conducted the all interviews. This hence increased the internal validity of the study.

5.4 STUDY LIMITATIONS

One of potential limitations is about generalizability. Muhimbili National Hospital might not be a true representative of the general population but probably relevant to the population of Headache. Very few criteria are available for diagnosing secondary headache according to the ICHD-II and some of the participants qualified into both the primary headache as well as the secondary headache. Also, the criteria for diagnosing primary headache include approximations of headache duration (in terms of hours and minutes) therefore there is a high possibility to have encountered the recall bias thus might have an effect in some of study findings. In most of the study comparison was being done between the studies, which used HIS and ICHD-II, thus might not be a good representative. This study was a hospital-based study, being compared with the other studies which are the community based studies might influence the big differences seen.

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APPENDICES

Appendix i: Consent Form-English Version

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
DIRECTORATE OF RESEARCH AND PUBLICATIONS.
Consent to participate in a study of the pattern of headache among patients attending Muhimbili National Hospital Neurology Clinic 2012.

Dear Sir/Madam,

I am Dr. George Longopa, 3rd year Masters of Medicine student at MUHAS presently involved in the above named study.

Those willing to participate must sign this form to indicate so. You will be interviewed, and examined physically. Your participation is voluntary and you have the right to discontinue from participating in this study at any time, however, your decision will not affect in any way your rights to care and treatment.

There are no risks by participating in this study and participants will benefit by being able to know the severity of their disease.

The information we collect from you will be confidential and will only be used for this purpose. Your name will not appear in any part of the report.

I would appreciate if you will agree to be a part of this study.

Dr. George Longopa signature_____ (investigator)

Who to Contact; If you have questions about this study or rights as a participant, contact Dr. George Longopaa mob.0754 870 969 MUHAS, P. O. Box 65001, Dar es Salaam or call Prof. M. Moshi, Chairman of the College Research and Publications Committee, P.O.Box 65001, Dar es salaam. Tel:21503026

I _____ have understood the above information and all my questions have been answered satisfactorily. I agree to take part in this study willingly and without coercion.

Name and signature of participant_____Telephone_____

Witnessed by_____(principal investigator)

Date: _____

Consent form-Swahili version

CHUO CHA AFYA NA TIBA MUHIMBILI

Fomu y aushiriki wahiari katika utafiti wa *katika wagonjwa wanaohudhuria kliniki ya wagonjwa wa mishipa ya fahamu katika Hospitali ya Taifa Muhimbili 2012.

Fomu ya ushiriki wa hiari

Mimi ni Dr. George Longopa mwanafunzi wa mwaka wa pili katika Chuo cha AfyanaTiba Muhimbili, nafanya utafiti uliotajwa hapo juu.

Kwa wale ambao wapo tayari kushiriki wata saini hii fomu kudhibitisha ushiriki wao. Kwahiyo utaulizwa maswali nakufanyiwa uchunguzi. Ushiriki wako niwa hiari na unahaki ya kukataa kuendelea kushiriki katika utafiti huu muda wowote, hata hivyo uamuzi wako huo hautakunyima haki yako ya msingi ya kupata matibabu na huduma muhimu hapa.

Hakuna matatizo yoyote utapata kwa kushiriki kwako katika ushiriki huu ila muhusika utafaidika kujua ukubwa wa tatizo linalokusumbua.

Hizi taarifa tunazokusanya zitakuwa ni siri na zitatumika tu kwa hii sababu na jina lako halitaandikwa katika ripoti.
Nitashukuru kama utakuwa sehemu ya utafiti huu.

Dr. George Longopa (Sahihi) …………………………………………… (Mtafiti)

Mtuwakuwasiliananae

Kama unaswali lolote kuhusu utafiti huu na haki yako yakushiriki wasilianana Dr. George Longopa, Nambayasimu 0754 870 969 MUHAS, S.L.P 65001 DSM, au Prof. W. Matuja

Idaraya Internal Medicine, MUHAS S.L.P 65001 DSM au Prof. Aboud, Mwenyekiti wa BodiyaUtafitiya Chuo, MUHAS, S.L.P 65001 DSM. Simu 21503026.

Mimi ……………………………………….. Nimeelewa maelezo yaliyotolewa hapo juu kwa ufasaha. Nakubali kwa hiari kushiriki katika huu utafiti bila tatizo lolote.

Jina ……………………………   Sahihi ……………………………….

Muhusika …………………………   Simu ………………………………

Shahidi …………………………   Mtafiti Mkuu ……………………………

Tarehe …………………………………

Appendix ii: Questionnaire-English Version

Demographic data

1. Identification number……………

2. Date of birth……………………….

3. Sex (a) Male……………………….

        i.   (b) Female………..

4. Marital Status (a) Single…….. (b) Married………. (c) Separated/Divorced…………
   (d) Cohabit………….……… (e) Widow………….……….

5. Education (a) None……… (b)Primary……..(c) Secondary…………………….

   (d)College………………. (e)University…………………………….

Symptoms Evaluation

6. Pain (a) None……………… (b) Mild………(c) Moderate……….. (d) Severe………
7. Age at which the headache first occurred?   _____
8.   Do you have more than one type of headache?   Yes/ No
9.   Have headache(s) changed since the first episode?   Yes/ No

10.   Are they more frequent?   Yes/ No

11. Headache best described as

    (a) Pulsating……   (b) Throbbing…….(c) sharp…….(d) stabbing pain……..(e)

       others (explain)……………..

12. Site of headache (a) frontal…….(b)parietal……….(c)Occipital……..

13. What is the location (a) Unilateral………..(b) Bilateral……

14. Time of worse symptoms (a) Day……(b)night……(c)both

15. How many attacks did you get in the last three month (a) one to two ……

16. (b) Three to four…………………….(c) More than five……………………………

17. How many hours does each attack last (a) one to four hours……………….

    (b) five to nine hours………………. (c) More than ten hours…………………..

18. Do you get treatment every time you have headache? **Yes/No**…….

19. Does the headache severe enough to Cause avoidance of routine activities such as walking, climbing stairs **Yes/No……..**

20. During headache do you experience at least one of the following (a)nausea or vomiting ……..(b)photophobia   or   phonophobia   ………(c)   Ipsilateral   nasal congestion……..(d)Eyelid oedema……(e)forehead & facial swelling…………………. (f) meiosis/ptosis………………………..

21. Do you have any referral note? **Yes/No (**If yes look for the referral diagnosis and jump to question 24,if No continue the following question)

22. Were treated in the peripheral hospital for the same problem? **Yes/No**

23. Did   they   tell   you   which   type   of   headache   are   you   suffering   for ?(a)Migraine……………,   (b)TTH……(C)Cluster   headache…..(d)others….. (explain)……………………………………………………………………………………

24. Does the headache attributed to another disorder? **Yes/No……**

25. **(if yes)**Headache resolve within 3month after Rx or spontaneous remission of causative disorders

26. Does anyone in your family have the similar problem? **yes/no**

27. Does headache occurs when you

   (a) Anxious………………………………..

   (b) Depressed…………………………….

   (c) Smoke cigarettes……………………

   (d) (If a women) when you use Oral contraceptives…..

   (e) Others (explain)…………………………..

Occupational History

28. What is your occupation?
(a)Student…..(b)Employed…..(c)Businessman…(d)None……(e)Others(explain)……….

(**if none then jump to question 30)**

On how many days in the last 3 months did you miss work or school because of your headaches? (a) one to four……………. (b) five to nine…………(c) More than ten………….

29. How many days in the last 3 months was your productivity at work or school reduced by half or more because of your headaches? (Do not include days you counted in question above where you missed work or school.) (a) one to four…………… (b) five to nine……..(c) More than ten………….

30. On how many days in the last 3 months did you not do household work (such as housework, home repairs and maintenance, shopping, caring for children and relatives) because of your headaches? (a) one to four…………. (b) five to nine………..…(c) More than ten……………..…

31. On how many days in the last 3 months did you miss family, social or leisure activities because of your headaches (a) one to four……..……(b) five to nine………..…(c) More than ten…………….

Physical examination

Blood pressure……………………………………………………………..

Temperature………………………………………………………………….

Pulse rates………………………………………………………………….

Respiratory rates………………………………………………………….

Neurological examination

Higher centers……………………………………………………………….

Motor…………………………………………………………………………

Cranial nerves………………………………………………………….......

Sensory………………………………………………………………….....

Laboratory Investigation

FBP…………………………………………………………………….

CCP…………………………………………………………………..

CT-Scan……………………………………………………………

Thank you very much for participation

Dodoso la kiwahili

1. Namba ya utambulisho……………………………………

2. Umri……………………………………

3. Jinsia (a)Mwanaume……………………………………
   (b)Mwanamke………………………

4. (a) Hajaoa…………..(b) Ameoa………….……(c) Ametalikiana…………………..
   (d) Wanaishi bilandoa………………. (e) Amefiwa na mme/mke…………………..

4. Elimu (a) Hajasoma………………. (b) Elimu ya msingi…………….(c) Elimu ya sekondari………………… (c) Chuo …….…....... (e) Chuo kikuu……….….…………

Sehemu ya Dalili/viashiria

5. Maumivu (a) Hamna kabisa………………... (b) Yapo kwa mbali……………(c) Yapo kiasi…………….… (d) Makali sana…………………..

6. Katika umri gani ndo kichwa kiliuma kwa mara ya kwanza? ....

7. Kichwa kinakuuma kwa zaidi ya aina moja ?Ndio/ Hapana

8. Kichwa kimewahi kubadilika jinsi kinavyouma ?Ndio/ Hapana

   a. Kinauma mara kwa mara ?Ndio/ Hapana

9. Unawezaje kukielezea kichwa jinsi kinavyokuuma

(a) kinapwita…… (b) kinagonga kwa nguvu….(c) maumivu makali…….(d) kama mtu anakuchoma……….. (e) Mengineyo (elezea)………………..

10. Sehemu kinapoumia (a) mbele ya kichwa……... (b) Pembeni……..

(c) Kisogoni…...

11. Upandegani (a) Upandemmoja……………….. (b) Pandezote……………

12. Muda gani maumivu yanakuwa makali zaidi (a) Mchana……………….….. (b)Usiku……………….…(c)Mudawote…………………………

13. Katika miezi mitatu iliyopita umeumwa kichwa mara ngapi (a) Mara moja hadi mbili………………… (b) Mara tatu hadi nne…….(c) Zaidi ya mara tano……….

14. Kila unapoumwa kichwa kinauma kwa masaa mangapi (a)Saa moja hadi masaa manne………… (b)Masaa matano hadi tisa………. (c) Masaa kumi na zaidi………………..

15. Huwa unapata matibabu kila unapoumwa kichwa?

Ndio /Hapana………………………………………

16. Kichwa kikiuma huwa unashindwa kufanya vitu kama ,kutembea, kupanda ngazi ?
Ndio/Hapana…………...

17. Wakati kichwa kinauma huwa unapata mojawapo kati ya vifuatavyo (a) kichefuchefu au kutapika ………………….... (b) kuogopa mwanga au kuogopa sauti kubwa au makelele ………….(c) pua kuziba upande kichwa kinapouma……..(d) Macho kuvimba………………. (e) Upande wa mbele wa kichwa nauso kuvimba…………. (f) Mboni ya jicho kujifunga au kufunguka sana…………………………

18. Unayo barua ya Rufaa? **Ndio/Hapana** (Kama ndio angalia ugonjwa alioandikiwa katika barua ya rufaa nauruke hadi swali la 21, kama hapana endelea na swali linalofata)

19. Ulikuwa unatibiwa katika hospitali nyingine kwa hili tatizo**? Ndio/Hapana**

20. Walikuambia unaumwa kichwa cha namna gani? (a) Kipandauso……….…(b) Cluster489 Headache……..………………….(c)Tensional……………….. Headache………………………… (d)Mengineyo……………….. (elezea)………

21. Wakati kichwa kinauma kunakuwa na tatizo lingine ambalo halihusiani na kichwa? **Ndio/Hapana**…………………………………………..

22. **(if yes)** Kichwa kuacha kuuma ndani ya miezi mitatu baada ya matibabu,au kupotea kwa kwasababu iliosababisha kichwa kuuma**Ndio/Hapana**

23. Kuna mtu yeyote katika familia yenu ana tatizo kamahili ?Ndio/Hapana

    a. (Kama Ndio mtaje)……………………………………………..

24. Kichwa kina anza kuuma kama ukifanya moja ya vituvifuatavyo ?

    a) Ukiwa na wasiwasi……………………………………………….

    b) Ukiwa mnyonge na kukosa raha……………………………

    c) Ukivuta sigara………………………….

    d) (Kama ni mwanamke) ukitumia vidonge vya uzazi wa mpango…

    e) Mengineyo (elezea)………………………….

Historiayakazi

25. Unafanyakazigani?

    (a)Mwanafunzi…………………….(b)Nimeajiriwa……….(c) Mfanyabiashara…………(d) Hana kazi………………(e) Mengineyo (elezea)……….

    (**kama hajaajiriwa nenda swali la 28**)

26. Ni siku ngapi ka tika miezi mitatu iliyopita ulishindwa kwenda kazini au shule kwa sababu ya kichwa kuuma (a) Siku moja hadi nne………………. (b)siku tano hadi tisa…………………..… (c) Siku kumi au zaidi……………..……...

27. Ni siku ngapi katika miezi mitatu iliyopita utendaji kazi wako kazini au shuleni ulipungua kwa sababu ya kichwa kuuma? (Usijumlishe na siku za swali la juu la siku ambazo hakwenda shule au kazini) (a) Siku moja hadi nne……..…… (b) Siku tano hadi tisa…….……(c) Siku kumi au zaidi………………..

28. Ni siku ngapi katika miezi mitatu iliyopita ulishindwa kufanya kazi za nyumbani (kama usafi, kwenda dukani, kuangalia watoto) kwa sababu ya kichwa kuuma? (a)Siku moja hadi nne……… (b) Siku tano hadi tisa……………….…(c) Siku kumi au zaidi…………………..

29. Ni siku ngapi katika miezi mitatu iliyopita ulishindwa kuungana na familiayako au rafiki zako ktk matukio kama sherehe kwa sababu ya kichwa kuuma, (a)Siku moja hadi nne……(b)Siku tano hadi tisa……(c) Siku kumi au zaidi……………..

Physical examination

Blood pressure --

Temperature ---

Pulse rates --

Respiratory rates --

Neurological examination

Higher centers --

Motor--

Cranial nerves---

Sensory--

Laboratory Investigation

FBP--

CCP--

CT-Scan---

Asante sana kwa ushiriki wako