Study on Headache Patients in a Tertiary Care Hospital

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Abstract

Background: Headache is a very common complains amongst patients attending inpatient and outpatient departments of Medicine and Neuromedicine. In this study an attempt has been made to evaluate the etiological and clinical pattern of headache in our populations. The results of the study will help prompt and early diagnosis of headache patients.

Methods: This study was conducted in the department of Medicine and Neuromedicine of SSMC and Mitford Hospital from 1st July, 2014 to 31st December, 2014. This is a prospective observational study. Sample size is 100. Qualitative purposive sampling has been done. Sample has been selected according to inclusion and exclusion criteria. Proper history taking, thorough physical examination and necessary investigation have been done to find out the etiology of headache. The data has been recorded in a structured format and analyzed by computer software SPSS.

Result: In the study mean age of the respondents was 39.8±26.66 (at 95% CI). Male and female ratio was 0.72:1. This study revealed that out of 100 patients 60 patients had Tension type headache (TTH), 11 patients had migraine, 15 patients had mixed cranial headache (MCH), 1 patient to Cluster headache (CH) and 13 patients had secondary headache. It was seen that most patients (87%) suffered from primary headache with TTH being the commonest diagnosis. Females were more affected than male in all groups except secondary headache. There was decline in primary headache with advancing age as the number of secondary headache increased. Investigations were needed in a very small group of patients.

Conclusion: It is very important to differentiate the different types of headache. Knowledge about etiological pattern of headache will help clinically in prioritizing the patients, in planning investigations, early diagnosis and prompt management and prevent complications of the patients.

Key words: Headache, Pain, Severity, Medicine, Neuromedicine, Etiological, Periodicity, coexisting symptoms, Co-existing diseases, Fundoscopic findings, Diagnosis, Symptom, Factor

INTRODUCTION

Headache is one of the most common presenting complaints of patients attending any health care delivery Centre. It is a rarity never to have suffered a headache.[1] Headaches may be classified as primary or secondary, depending on the underlying cause. Secondary headache may be due to structural, infective, inflammatory or vascular conditions, but these are dwelt with elsewhere.[2] So, it is important health problem. As many as 90% individuals have at least one headache per year. Severe, disabling headache is reported to occur at least annually by 40% people worldwide.[1] Rasmussen et al[3] showed that the lifetime prevalence of headache in general population was 93% for men and 99% for women. The one year prevalence varies in different studies from 23.0 to 90.0%.[3] By contrast, in elderly population, prevalence of headache ranged from 5% [4] to 50% [3] in different studies indicating a decline with age. In fact, the prevalence of primary headaches declines with age; whereas that of secondary headaches increases.[5] In spite of that, primary headaches are the most frequent headaches in elderly and secondary headaches account of no more than 10-20% of headaches diagnosed over 65 years. [6] Headache occur in over 80% of women during their childbearing years.[7] Therefore they often present during pregnancy. The hormonal changes accompanying the menstrual cycle, pregnancy and postpartum are thought to be responsible.[8] Tension-type headache (TTH) is more common than migraine. One study in Italy[9] showed a prevalence of 2.6% for TTH in elderly compared with 1% for migraine. The study with Thai elderly [3] found that the prevalence of TTH and migraine in elderly was 18.3% and 2.9% respectively.

Headache is the major cause for attendance in neurological outpatient clinics, representing approximately 15% of routine neurological attendance and reflecting the anxiety amongst both patients and doctors that headache may be due to a sinister cause.[9] Thus every patient with headache requires careful consideration and sometimes thorough investigation.[4] Secondary headache due to CNS diseases, metabolic abnormalities, hypertension, drug induced headache etc. are more frequent in elderly.[4] Psychological factors like depression and anxiety were also commonly associated with headache.[3]But, up to so far, only female sex and younger age have been universally determined as risk factors for headache.[10] The first description of a migrainous personality was published by Harold Wolf in 1937 who reported an association between migraine and some psychiatric symptoms. Although this characterization of migrainous adults as obsessive, shy, obedient and with rigid and inflexible traits[11] has since been abandoned, the concept at that time highlighted a need to investigate correlations between headaches and psychological factors[12]. Epidemiological studies have shown that psychiatric disorders occur more frequently in patients who suffer from

recurring headaches.[13] The term chronic daily headache (CDH) covers a group of primary headaches that occur more than fifteen days per month, with duration of a minimum of four hours, over at least three months.[14,15,16] CDH include chronic migraine (CM), chronic tension-type headache (CTTH), hemicranias continua (HC), and new daily persistent headache (NDPH)[17]. CDHs affect from 3 to 5% of the general population, and account for approximately 40% of resources of clinics specialized in headaches[18.] Chronic migraine is the most prevalent subtype of CDH seen in tertiary care centers[19].

A review of the literature on headache and personality provides strong evidence of secondary neuroticism and increased sensitivity to stress in patients suffering fromCDH[20, 21, 22, 23]and episodic migraines (EM) [24, 25, 26]. Higher scores for neuroticism, a term that groups variables related to negative personality traits, have been noted for chronic migraine patients,[11,13,25,26] than for other patients or for a healthy population. Mood and anxiety disorders are the most prevalent in this population. Many studies used the Minnesota Multiphasic Personality Inventory (MMPI) to investigate patients with different types of headaches or other pains. The highest scores were given to patients with the strongest or most frequent types of pain and to patients with long-lasting headaches. This perhaps justifies why "such psychological abnormalities, often seen in chronic headaches, are frequently interpreted as responses to chronic pain"[25]. In the case of migraine, Bigal and Lipton described it as a chronic disease with progressive and sporadic manifestations. In some people[28, 29] the very process of becoming chronic remains unclear. It is believed that progression of migraine leads to changes in the central nervous system that are manifested by changes in nociceptive and pain thresholds, such as central sensitization[30].

The fact that individuals with chronic headache, including migraine, regularly suffer from other comorbidities, indicates the need for studies on the possibility that the same pathophysiological mechanisms explain the two clinical manifestations[31.]The relationship between premorbid disorders may be causal or casual, or even share the same risk factors (genetic or environmental) producing a mental state which gives rise to the two conditions[12.] The characterization of the personality and psychological functioning of patients with headaches has been an area of interest not only in the psychosomatic medical literature, but also in psychiatry and neurology[11,12.13,23,32,]. The mean age of the patients was 42 years with a standard deviation of 14.42 and range of 18 to 81 years. The mean age at the onset headaches for the CDH Group was 34.38 years. For the EM Group the mean age at the onset of pain was 27.83 years The most frequent subtype of daily chronic headache was migraine[.33] The CDH Group had the highest proportion of patients with dependent personality, anxiety with less concentration and productivity and depressive disorders. Moreover, two symptoms that are often present in depression were analyzed in particular; patients with CDH had more suicidal thoughts and despair among those with CDH. Among patients without depression, although there was no significant difference between the two groups regarding suicidal thoughts, patients with CDH presented more hopelessness.

In the CDH group, no difference was found comparing genders in relation to patients presenting neuroticism symptoms in general. However, on analyzing subtypes of disorders separately, it was noted that, in this group, women had more depression and suicidal ideation than men. The fact that patients in the EM Group were younger than those in the CDH Group seems to corroborate the hypothesis that EMs tend to become more frequent with time. Evidence of three or more subtypes of neuroticism was identified in 34% of patients with CDH and 5% with EM. Patients with CDH proved to be susceptible to more subtypes of neuroticism and to a higher number of symptoms, often with indicia (signs, evidence) of two or more concomitant neuroticism subtypes. This corroborates previous publications that assumed that psychiatric disorders occur more frequently in patients who suffer from recurring headaches[13.] In 1982, Andrasik stated in his studies that the severity of psychiatric symptoms might be positively associated with the frequency of headaches and not with the intensity[12.]EM patients exhibited a perceptual detachment from their problems, less motivation and attention in relation to new and unexpected situations, characterized by an excessively low level of anxiety, CDH individuals demonstrated impulsiveness, irritability, panic and mood swings that lead to less concentration and a drop in productivity, characterized by an excessively high level of anxiety. The association of CDH with anxiety and depression is well established, as was also found in this study. With EMs, the patients tend to become detached from themselves and others, decreasing their self-criticism and perception that they have problems, with less motivation and assertiveness to solve their problems, they become less aware, with a distancing of their opinions and expectations of others, eventually evolving to an extreme of avoidant personality disorder. It seems to be connected to their pain, nothing and nobody else matters, a strategic attempt to confront or adapt to the stress associated with the painful condition. CDH patients, on the other hand, have the opposite stance, an anxious search with dependent, a disorganized state and irritable mood with less control, a depressive anxious apathy, loss of hope and suicidal ideation.

So, it is possible to understand the despair, suicidal ideation and the larger number of combined disorders as a collapse of the organism in successive attempts to adapt to continuous pain, typical of a stress exhaustion stage[19.] Patients with CDH tend to have dependent personality disorder, low production and concentration, anxiety, depression, suicidal ideation and hopelessness, superimposing two or more psychological disorders. These factors should be considered for a better resolution in the treatment of CDH. It is primarily a neurological symptom but most often it is not associated with any other neurological features.[34] I will consider most common and neurological causes of headache. There is not much study regarding headache in our country so far. So this type of study will help the headache patients in future. Though headache is commonly encountered in outpatient and inpatient department of our

hospitals, it is sometimes not possible by the physician to find out exact etiology by taking history and rational investigations. It is due to overburden of the patients and also for the financial constraints of the patient. If we find out the exact etiological pattern of headache to evaluate the patient, then we can serve the patient better in this regard.

RATIONALE
Though headache is commonly encountered in outpatient and inpatient department of our hospitals, it is sometimes not possible by the physician to find out exact etiology by taking history and rational investigations. It is due to overburden of the patients and also for the financial constraints of the patient. If we find out the exact etiological pattern of headache to evaluate the patient, then we can serve the patient better in this regard.

Research question / Hypothesis
What are the most common causes of headache patients in tertiary care hospitals?

Objectives
General Objective:
To find out the etiology, clinical presentation of headache patients attending a tertiary care hospital.

Specific Objectives:
1. To find out demographic pattern of the patients presented with headache.
2. To find out etiology of headache.
3. To study the pattern of clinical presentation of patients with headache.

MATERIALS AND METHODS

Study population:
Patients attending with headache in Medicine and Neuromedicine inpatient outpatient departments of Sir Salimullah Medical College and Mitford hospital, Dhaka.

Sample size and the statistical basis of it:
A total of 100 patients will be enrolled in the study. The sample size is calculated by using following statistical formula

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

n = the desired sample size.

p = the proportion of the target population estimated to have particular characteristics if no reasonable estimation then we use 50% (0.5).

q =(1-p)=(1-0.5)=0.5

z =5% level of significance or 95%confidence level, z=1.96.

d =degree of accuracy or acceptable error usually set ad 5 %(0.05), but it should not exceed more than 20%.

Here d is 10%

(0.1) to keep the sample size desired with time,

$$n = \frac{(1.96)^2 \times 0.5 \times .05}{(0.1)^2} = 96.04$$

Total 100 cases will be enrolled.

Inclusion criteria:
1. Patients presenting with headache in indoor and outdoor of Medicine and Neuro-medicine department of Sir Salimullah Medical College and Mitford hospital, during the study period.
2. Patients over the age of 18 years.
3. Giving informed written consent.

Exclusion criteria:
1. Age at or below 18 years.
2. Patient not given consent.

Data collection:
Detailed history was taken, then thorough clinical examinations, necessary investigations (if needed) for headache was done. All these data was collected by using preformed data sheet.

RESULTS

Age of the respondents:
Table: I: statistical distribution of age of the respondents by sex. (N100)

Sex of the respondents	Mean age	Std. deviation	Median age
Male	40.3	13.033	49.5
Female	39.3	10.083	49.5
Total	39.8	11.558	49.5

Mean age of the male respondents was 40.3±26.033 (at 95% CI) and mean age of the female respondents was 39.3±26.66 (at 95%CI). Median age was reported 49.5 years. Total mean age of the respondents was 39.8±26.66 (at 95%CI). As mean age appears to be less than median age for each sex, it indicates that the study population representing headache patients had a predilection towards younger age group, hence having a left skewed distribution.

Table: II: Frequency distribution of respondents by age range and sex. (N100)

Age range	Male	Female	Total
18-29	3	7	10
30-39	19	25	44
40-49	15	20	35
50-59	3	3	6
60-69	1	2	3
70-79	1	1	2
Total	42	58	100

Maximum 44 respondents (44%) were within 30-39 years age group. Next highest respondent's age group was 40-49 years with 35(35%) respondents. Women were comparatively younger than men.

Sex of the respondents:
Table: III: frequency distribution of respondents by sex (N100)

Sex	Frequency	Percent
Male	42	42
Female	58	58
Total	100	100

Out of 100 respondents 58(58%) were female and 42(42%) were male. Male and female ratio was 0.72:1.

Occupations of the respondents:
Table: IV: frequency distribution by occupation. (N100)

Occupation	Frequency	Percent
Housewives	51	51
Service holder	20	20
Day laborer	10	10
Businessman	11	11
Others	8	8
Total	100	100

From the present study it was revealed that51 (51%) respondents were housewife, 20 (20%) were service holder, 10 (10%) were day laborer and11 (11%) were businessman. Among women51 (51%) were housewives. From the present study it was revealed that51 (51%) respondents were housewife, 20 (20%) were service holder, 10 (10%) were day laborer and11 (11%) were businessman. Among women51 (51%) were housewives.

Periodicity of headache:
Table: V: frequency distribution of the respondents by periodicity of pain. (N100)

Periodicity of pain	Frequency	Percent
One attack in a month	22	22
More than one attacks in a month	49	49
Daily attack	29	29
total	100	100

22(22%) respondents had suffered from less than one attack of headache in a month, 49 (49%) had one or more attack in a month and 29(29%) had daily attack.

Attributes of individual attacks:

Table: VI: frequency distribution of respondents by character of pain. (N100)

Character of pain	Frequency	Percent
Pulsatile	14	14
Pinprick	3	3
Electric shock	2	2
Tingling	11	11
Dull	40	40
Penetrating	6	6
compressive	24	24
Total	100	100

Maximum 40 (40 %), respondents had dull type of headache. Second highest group with24 (24%) respondents had compressive type of headache. 14(14%) had pulsatile type of headache, and 11(11%) had tingling type of headache

Table: VII: frequency distribution of respondents by severity of pain (N100)

Severity of pain	Frequency	Percent
A. **Mild**	B. **45**	C. **45**
Moderate	35	35
Severe	20	20
total	100	100

According to severity of attack (measured by a severity scale described in appendix B) 45(45%) respondents had mild headache, 35(35%) had moderate and 20 (20%) had severe headache.

Table: VIII: Frequency distribution of respondents by location of headache. (N100)

Pattern of headache	Frequency	Percent
Bandlike	30	30
Hemicranial	10	10
Global	28	28
Bitemporal	13	13
Occipital	13	13
Others	7	7
Total	101	100

Band like and global pattern of headache were the commonest types of headache revealed by the present study, complained by 30(30%) and 28(28%) respondents respectively. Bitemporal and occipital pattern of headache were complained by 13(13%) respondents each. Only10 (10%) respondents had hemi cranial type of headache.

Precipitating and relieving factors:

Table: IX: frequency distribution of precipitating factors

Precipitating factors	Frequency	Percent
Stress	65	38.7
Physical activity	26	15.5
Fatigue	20	11.7
Sleeping disturbance	20	11.7
Anxiety	9	5.3
Sunlight	8	4.8
Journey	7	4.2
Food	6	3.6
Warmth	4	2.4
Menstruation	3	1.8

Stress was found to be the commonest precipitating factor. Out of all respondents 65 (38.7%) had reported stress as a precipitating factor for the headache. Physical activity, fatigue and sleeping disturbance was reported as precipitating factors by 26 (15.5%), 20 (11.9%) and 20 (11.9%) respondents respectively.

Table: X: Frequency distribution of relieving factors

Reliving factors	Frequency	Percent
Drugs	86	54.4
Sleep	42	26.6
Massage	13	8.2
Rest	12	7.6
Posture	5	3.1

86 (54.4%) reported drugs to relieve their headache. Sleep, massage and rest acted as relievers of headache in 42 (26.6%), 13 (8.2%), 12 (7.6%) respondents respectively.

Co-existing symptoms:

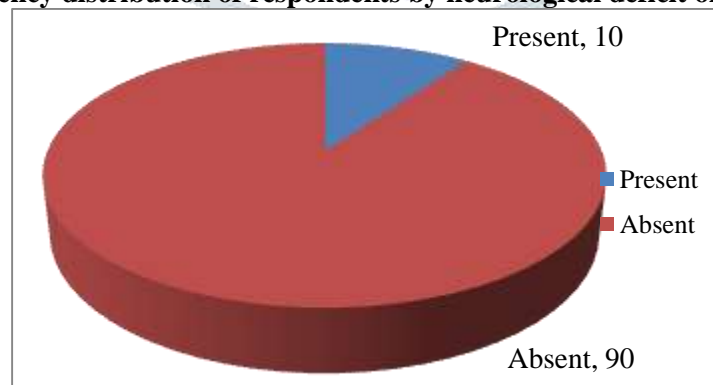### Table: XI: frequency distribution of coexisting symptoms

Co-existing symptoms	Frequency	Percentage
Anxiety	54	29.5
Nausea	37	20.2
Depression	30	16.3
Photophobia	26	14.2
Visual disturbance	15	8.2
Vomiting	11	6.0
vertigo	10	5.5

Anxiety was most common reported coexisting symptom as 54 (29.5%) respondents had anxiety, 37 (20.2%)respondents had nausea, 30 (16.3%)respondents had depression,26 (14.2 %)respondents had photophobia and 15(8.2%) respondents had visual disturbance. 11(6.0%)had vomiting and 10(5.5%) had vertigo.

Co-existing diseases:

Table: XII: Frequency distribution of co-existing diseases

Co-existing diseases	Frequency	Percentage
Peptic ulcer disease	55	30.0
ENT and dental problems	45	24.6
Hypertension	32	17.5
Diabetes Melitus	28	15.3
CNS disease	8	4.4
Stroke	8	4.4
Head trauma	7	3.8

Peptic ulcer disease was the most common co-existing disease among the respondents (55, 30%). 45 patients (24.6%) complain of ENT and dental diseases. Hypertension and diabetes mellitus were associated in 32 (17.5%) and 28 (15.3%) patients respectively.

9. Neurological deficit and fundoscopic findings:

Figure: 3: Frequency distribution of respondents by neurological deficit or focal sign (N 100)

Among 100 patients only 10 respondents had any neurological deficit or focal sign. Fundoscopic examination revealed that 90 respondents had normal findings and 3 respondents had papilledema.

Table: XIII: Frequency distribution of respondents by fundoscopic findings (N100)

Fundoscopic finding	Frequency	Percent
Normal	91	91
Papilledema	3	3
Other	6	6
Total	100	100

Among 100 patients only 9 respondents had any neurological deficit or focal sign. Fundoscopic examination revealed that 91 respondents had normal findings and 3 respondents had papilledema. 6% had other pathology like diabetic retinopathy (4%) and hypertensive retinopathy (2%).

10. Investigations:

Table: XIV: Frequency distribution of respondents by types of investigation.(N100)

Investigations done	Frequency	Percent
None	81	81
CT scan of head	14	14
MRI of brain	4	4
X-ray skull	1	1
Total	100	100

Out of 100 respondents 81 (81%) respondents had not done any radiological investigations like CT, MRI or X-ray.14(14%) respondents had done CT scan of their head, 4 had done MRI neuroimaging was done in most cases with a history of head trauma, other CNS disorder or stroke.

Table: XV: Frequency distribution of respondents by radiological findings. (N100)

Radiological findings	Frequency	Percent
Normal	10	52.6
Intracranial neoplasm	1	5.2
Stroke	3	15.7
Other	5	26.0
Total	19	100

Among the patients who had done radiological investigations, 10 had normal findings, 3 had stroke, 1 had intracranial neoplasm and 5 had others abnormal findings.

Diagnosis:

Table: XVI: frequency distribution of respondents by types of headache (n 100)

Diagnosis	frequency	Percent
Primary	87	87
Secondary	13	13
Total	100	100

Out of all respondents 87(87%) had primary type of headache and 13(13%) had secondary type of headache.

Table: XVII: Frequency distribution of respondents by diagnosis with sex distribution. (N100)

Primary headache	Male	Female	Frequency
TTH	22(52.3%)	38(65.5%)	60(60.0%)
Migaine	4(9.5%)	7(12.0%)	11(11.0%)
MCH	6(14.2%)	9(15.5%)	15(15.0%)
CH	1(2.3%)	0(.0%)	1(1.0%)
Secondary	9(21.4%)	4(6.8%)	13(13%)
Total	42(100%)	58(100%)	100(100%)

TTH was found commonest variants.60 (60%) respondents had TTH, 15(15%) had MCH and 11(11%) had migraine. Only one respondent had cluster type of headache.

Table: XVIII: Frequency distribution of respondents with secondary headache by types of secondary headache. (N13)

Secondary headache	Frequency	Percent
Intracranial neoplasm	1	7.7
Stroke	3	23.0
Headtrauma	2	15.4
BIH	3	23.0
Others	4	30.8
Total	13	100

In 13 patients with secondary headache intracranial neoplasm, stroke, head trauma and BIH and others were the cause in 1, 3, 2, 3, 4 respondents respectively.

Pattern of presentation in different headache

Table: XIX: frequency of different types of headache in different age range (N100).

Headache	Age range of the respondents						Total
	18-29	30-39	40-49	50-59	60-69	70-79	
TTH	7(70.0%)	18(62.0%)	26(60.4%)	5(50.0%)	3(42.8%)	1(100%)	60(100%)
Migraine	2(20.0%)	4(13.8%)	5(11.6%)	0(0.0%)	0(0.0%)	0(0.0%)	11(100%)
MCH	1(10.0%)	7(24.1%)	7(16.3%)	0(0.0%)	0(0.0%)	0(0.0%)	15(100%)
CH	0(.0%)	0(.0%)	1(2.3%)	0(0.0%)	0(0.0%)	0(0.0%)	1(100%)
Secondary	0(.0%)	0(.0%)	4(9.3%)	5(50.0%)	4(57.1%)	0(0.0%)	13(100%)
Total	10(10%)	29(29%)	43(43%)	10(10%)	7(7%)	1(1%)	100(100%)

All 11 patients with migraine were in 18-49 year group. TTH and MCH were also common in 30-49 age groups. 57.1% patients with secondary headache were between 69-70 years.

Table: XX: Periodicity of primary type headache (N87)

Primary headache	Periodicity of pain			Total
	<one attack in a month	One or more attacks in a month	Daily attack	
TTH	9 (15%)	25(41.7%)	26(43.3%)	60(100%)
Migraine	4(36.4%)	7(63.6%)	0(.0%)	11(100%)
MCH	3(17.6%)	5(33.3%)	7(46.7%)	15(100%)
Cluster headache	1(100%)	0(.0%)	0(.0%)	1(100%)
Total	17(19.5%)	37(42.5%)	33(37.9%)	87(100%)

26(43.3%) TTH patients had complaints of daily headache while 25(36.4%) had one or more attack in a month. None had been suffered from daily attack of migraine. 7(63.6%) respondents of migraine group and 5(33.3%) respondents of MCH group had one or more attacks on every month.

Table: XXI: Severity of primary type of headache. (N87)

Primary headache	Severity of pain			Total
	Mild	Moderate	severe	
TTH	35 (58.3%)	22 (36.7%)	3 (5%)	60 (100%)
Migraine	0 (.0%)	3 (27.3%)	8(72.7%)	11 (100%)
MCH	2 (13.3%)	6 (40%)	7 (46.7%)	15 (100%)
Cluster headache	0	1 (100%)	0 (.0%)	1 (100%)
Total	37 (42.5%)	32 (36.8%)	18 (20.7%)	87 (100%)

Maximum TTH patients 35(58.3%) had mild type of headache. But maximum patients with migraine and MCH had severe headache: 8(72.7%) and 7(46.7%) respondents respectively.

Table: XXII: Location of headache in primary headache (N87).

Location of headache	Types of primary headache				Total
	TTH	Migraine	MCH	Cluster headache	
Bandlike	32(53.3%)	0(.0%)	3 (20%)	0 (.0%)	35(40.2%)
Hemicranial	0 (.0%)	8 (72.7%)	2 (13.3%)	0(.0%)	10 (11.4%)
Global	21 (35%)	1(9.0%)	5 (33.3%)	1(100%)	28 (32.2%)
Bitemporal	4 (6.7%)	1(9.0%)	3 (20%)	0(.0%)	8(9.2%)
Occipital	2 (3.3%)	1(9.0%)	2 (13.3%)	0(.0%)	5 (5.7%)
Others	1(1.7%)	0(.0%)	0 (.0%)	0(.0%)	1(1.1%)
Total	60 (100%)	11 (100%)	15 (100%)	1(100%)	87(100%)

Band like headache common in TTH group of headache.32 (53.3%) patients of TTH complained band like headache, whereas 8(72.7%) patients with migraine had hemi cranial headache. 5 (33.3%) patients of MCH had global headache.

Table: XXIII: Character of headache in primary headache. (N 87).

Character of pain	Types of primary headache				Total
	TTH	Migraine	MCH	Cluster headache	
Pulsatile	3 (5%)	9(81.8%)	2(13.3%)	0(.0%)	14(16.0%)
Pinprick	1(1.6%)	1(9.1%)	1(6.7%)	0(.0%)	3(3.4%)
Tingling	3(5%)	1(9.1%)	6(40.2%)	1(100%)	11(%)
Dull	30(48%)	0(.0%)	2(13.3%)	0(.0%)	32(%)
Penetrating	4(6.4%)	0(.0%)	2(13.3%)	0(.0%)	6(%)
compressive	19(30.4%)	0(.0%)	2(13.3%)	0(.0%)	21(%)
Total	60(100%)	11(100%)	15(100%)	1(100%)	87(100%)

In terms of character of the pain 30(48.0%) patients of TTH experienced dull pain, while 19(30.4%) had compressive. By contrast majority of migraine suffers, 9(81.8%) had suffer pulsatile pain. Character of pain was more or less evenly distributed in MCH group with tingling type being most common (40.2%).

Table: XXIV: Precipitating factors of primary headache. (N87)

Primary headache	Precipitating factor			
	Stress	Fatigue	Activity	Anxiety
TTH	41 (68.3%)	5 (8.3%)	4 (6.6%)	10 (16.6%)
Migraine	8(72.7%)	0 (.0%)	3 (27.27%)	0 (.0%)
MCH	8 (53.3%)	3 (20.0%)	4 (26.6%)	1 (6.6%)

Stress was the commonest precipitating factor in TTH, migraine and MCH with 41(68.3%), 6(72.7%) and 8(53.3%) patients respectively. All the common precipitating factors like stress, fatigue, activity etc. showed more association to migraine as each caused headache in more than migraine headache. However no migraine patient thought anxiety was a precipitating factor while 10(16.6%) of TTH patients said it was.

Table: XXV: Relieving factors of primary headache. (N 87)

Primary headache	Relieving factors			
	Drugs	Sleep	Rest	Massage
TTH	49 (81.6%)	11 (18.3%)	4 (6.6%)	6(10.0%)
Migraine	11 (100.0%)	3 (27.27%)	1 (9.1%)	0 (.0%)
MCH	13 (86.8%)	4 (26.6%)	2 (13.3%)	0 (.0%)

Drugs relieved pain in all migraine sufferers (100%). It was also commonest reliving factor in TTH and MCH with 49(81.6%) and 13(86.6%) patients opting for it respectively.

Table: XXVI: Co- existing symptoms in primary headache. (N87).

Primary headache	Co-existing symptoms				
	Nausea	Vomiting	Anxiety	Photophobia	Visual disturbance
TTH	12 (20.0%)	1 (1.6%)	47 (78.3%)	3 (5.0%)	4 (6.6%)
Migraine	10 (90.9%)	6 (45.5%)	1 (9.0%)	7 (63.6%)	7 (63.6%)
MCH	10 (66.6%)	2 (13.3%)	9 (60.0%)	8 (53.3%)	3 (20.0%)

Nausea and vomiting were closely associated with migraine as 10(90.9%) and 5(45.5%) patients with migraine had them respectively. Photophobia and visual disturbance were also predominantly associated with migraine. 47(78.3%) TTH patients had anxiety which was less common in migraine with only 1(9.0%) patients.

DISCUSSION

This study was undertaken to evaluate the etiological pattern of headache inpatient and outpatient departments of Medicine and Neuromedicine of SSMC and Mitford hospital to identify the exact cause of it. Selection of the patients for the study was randomly made irrespective of their sex and education. Headache was mostly diagnosed as clinically and some selective investigations were done for some selective patients. Mean age of the study group respondents was 39.8 years with a standard deviation of ±11.5 years. Median age was reported 49.5 years. Maximum 44 respondents (44%) were within 30-39 years age group. Next highest respondent's age group was 40-49 years with 35(35%) respondents. Women were comparatively younger than men. In both sexes majority of patients remained within younger age range with a steady decline in number of patients with advancing age. But this decline was more profound in female patients as the male to female ratio increased with increasing age. Out of 100 respondents 58(58%) were female and 42(42%) were male. Male and female ratio was 0.72:1. In a study on Thai elderly[3], male to female ratio was 0.8:1. A figure similar to the findings of the study was found by Habib M[35] and Solomon Gd.[36] where male to female ratio was 0.5:1 in both cases. The decline in number of female patients in older age groups in due to the fact that women in general and elderly women in particular are largely deprived of access to medical facilities. This is why Rahman M[37] found more men (54.65%) attending hospitals with headache than women (45.35%).

From the present study it was revealed that 51 (51%) respondents were housewife, 20 (20%) were service holder, 10 (10%) were day laborer and 11 (11%) were businessman. Regarding frequency of headache 22(22%) respondents had suffered from less than one attack of headache in a month, 49 (49%) had one or more attack in a month and 29(29%) had daily attack.

Maximum 40 (40 %), respondents had dull type of headache. Second highest group with 24 (24%) respondents had compressive type of headache. 14(14%) had pulsatile type of headache, and 11(11%) had tingling type of headache. According to severity of attack (measured by a severity scale described in appendix B) 45(45%) respondents had mild headache, 35(35%) had moderate and 20 (20%) had severe headache. Band like and global pattern of headache were the commonest types of headache revealed by the present study, complained by 30(30%) and 28(28%) respondents

respectively. Bitemporal and occipital pattern of headache were complained by 13(13%) respondents each. Only10 (10%) respondents had hemi cranial type of headache. This finding is similar to the observations of prencipe M[38]. In their study they found 60% patients were suffering from mild to moderate headache and proportion of patients with moderate to severe attacks were higher in patients with migraine than in those with TTH (82.6%and 35.8% respectively). Also in that study severe attacks were reported by 41.3% of patients with migraine but none with TTH.

Stress was found to be the commonest precipitating factor. Out of all respondents 65 (38.7%) had reported stress as a precipitating factor for the headache. Physical activity, fatigue and sleeping disturbance was reported as precipitating factors by 26 (15.5%), 20 (11.9%) and 20(11.9%) respondents respectively. 86 (54.4%) reported drugs to relieve their headache. Sleep, massage and rest acted as relievers of headache in 42 (26.6%), 13 (8.2%), 12 (7.6%) respondents respectively. Anxiety was most common reported coexisting symptom as 54 (29.5%) respondents had anxiety, 37 (20.2%) respondents had nausea, 30 (16.3%) respondents had depression, 26 (14.2%)respondents had photophobia and 15(8.2%) respondents had visual disturbance. 11 (6.0%)had vomiting and 10(5.5%) had vertigo. Similarly research findings of Torelli P[39] also shows that stress and mental tension are the most common factors that causes headache.

Out of all respondents 87(87%) had primary type of headache and 13(13%) had secondary type of headache. TTH was found commonest variants.62 (62%) respondents had TTH, 14(14%) had MCH and 11(11%) had migraine. Only one respondent had cluster type of headache .In 13(13%) patients with secondary headache intracranial neoplasm, stroke, head trauma and BIH and others were the cause in 1, 3, 2, 3,4respondents respectively. All 11 patients with migraine were in 18-49 year group. TTH and MCH were also common in 30-49 age groups. 57.1% patients with secondary headache were between 69-70 years. Other studies also have shown that TTH was the commonest type of headache among general population. Habib M[35]found that 69% patients had TTH which is similar to the findings in the study. But in that study among patients of all age groups, 26% had migraine which is more than my observation (9.1%) and only 5% in his study population had other headache where as 13.2% in this study had secondary headache. In another study Rahman M[37]found that 41.57% patients had TTH, 22.53% had migraine and 18.02% MCH. Here again, the percentage of TTH and MCH reflect my findings but that of migraine is much higher than observed in this study. This can be explained by the fact that migraine is more common among in adolescence. This study included patients over 18 year's up to 79 and increasing age are more prone to secondary headache and in whom, migraine prevalence is less.

26(43.3%) TTH patients had complaints of daily headache while 25(36.4%) had one or more attack in a month. None had been suffered from daily attack of migraine. 7(63.6%) respondents of migraine group and 5(33.3%) respondents of MCH group had one or more attacks on every month. Maximum TTH patients 35(58.3%) had mild type of headache. But maximum patients with migraine and MCH had severe headache: 8(72.7%) and 7(46.7%) respondents respectively.

Band like headache was common in TTH group of headache.32 (53.3%) patients, whereas 8(72.7%) patients with migraine had hemi cranial headache. 5 (33.3%) patients of MCH had global headache. Regarding character of the pain 30(48.0%) patients of TTH experienced dull pain, while 19(30.4%) had compressive. On the other hand majority of migraine patients, 9(81.8%) had pulsatile pain. Character of pain was more or less evenly distributed in MCH group with tingling type being most common (40.2%). But among 11 patients of migraine 8(72.7%) described the typical unilateral pain. Rahman M[37], in his study found equal distribution of unilateral and bilateral headache among migraine sufferers (49.68% and 44.52% respectively). But total number of migraine patients in this study was too small to draw a conclusion. Nausea and vomiting were closely associated with migraine as 10(90.9%) and 5(45.5%) patients with migraine had them respectively. Photophobia and visual disturbance were also predominantly associated with migraine. 47(78.3%) TTH patients had anxiety which was less common in migraine with only 1(9.0%) patients.

Similarly Rahman M[37] found that nausea (78.71%) and vomiting (33.55%) were important associated symptoms of migraine. In addition 63.6% patients of migraine in this study had photophobia which is consistent with the findings of Rahman M[37] (69.68%).A study among elderly Thai population[3] also found that nausea, vomiting, blurring of vision, photophobia and phonophobia were common associated symptoms in migraine. Among 100 patients only 10 respondents had neurological deficit or focal sign. Fundoscopic examination revealed that 90 respondents had normal findings and 3 respondents had papilledema. Out of 100 respondents 81 (81%) respondents did not required any radiological investigations. CT scan and MRI scan were done in cases with history of head trauma and other CNS disorders.14(14%) cases underwent CT scan of head and 4(4%) underwent MRI scan of brain. These investigations revealed stroke in 3(3%) cases andintracranial neoplasm in 1(1%) case. 10(10%) cases did not have any neuroimaging finding. One study by Habib M[35] found that neuroimaging was done in 135 patients out of which 38.39% had abnormal findings. This is consistent with the findings in this study. The number (13%) patient with secondary headache was too small to bring out any consistent patterns in their presentation though patients with IIH had nausea and vomiting more than others. Only one patient with secondary headache was diagnosed to have brain tumor. This may be due to the fact almost all patients with tumor are referred to the department of neurosurgery.

CONCLUSION

This study revealed that though there is some variation of age and sex incidence compared with western studies, the etiological pattern, symptomatology and physical signs, correlates with other studies of home and abroad. There can be no doubt that whatever the mode of presentation, with the help of clinical skills and minimum laboratory investigations, correct diagnosis and proper management can be provided and complication may be prevented. This cost effective management will help our poor community and nation as a whole.

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