

**Original Research Article****PREVALENCE OF HEADACHE IN GENERAL POPULATION OF KARACHI, PAKISTAN****Huda Kafeel<sup>1\*</sup>, Ramsha Rukh<sup>2</sup>**

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**ABSTRACT**

A headache or cephalgia is the pain or discomfort in the head region with the pain being above the eyes or the ears, behind the head (occipital), or in the back of the upper neck. Reasons for cephalgia are of diverse types including any reason of general routine such as stress or workload or any disease condition. Treatment pattern includes Non steroidal anti-inflammatory drugs that are most widely used therapy enough to treat headache. As stress is one of the major reasons of headache and stress is quite common in our community due to obvious reasons and therefore objective of this survey is to evaluate prevalence of headache and the pattern of treatment taken by individuals. Prevalence of headache is determined as 92.4% in our population and the use of over the counter drugs for treating it is about 72.4%. Paracetamol is shown to be of prime use.

**Key words:** Headache, Prevalence, Population, Karachi

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A headache is pain or discomfort in the head with the pain being above the eyes or the ears, behind the head (occipital), or in the back of the upper neck. The pain originates from the tissues and structures that surround the brain because the brain itself has no nerves that give rise to the sensation of pain (pain fibres). This pain may be dull, sharp, throbbing, persistent, mild, or intense. <sup>[1]</sup> Headaches can be classified in two categories: Primary headache and Secondary headache. Primary headaches are not caused by other underlying disease or medical condition. Primary headache includes tension-type headache, migraine, sinus headache and cluster headaches. Primary headaches accounts for more than ninety percent of all headaches. Tension-type headaches involve a constant ache, can be described as a feeling of burden or tightening. They may last from minutes to days and affect both sides of the head, and do not aggravate with usual physical activity. Migraines are severe headaches, may continue 4-72 hours, are typically throbbing, of moderate to severe intensity, and are aggravated by routine physical activity. These headaches are associated with nausea, either with or without vomiting, and also sensitivity to light and sound. <sup>[2]</sup> Sinus headaches are associated with a deep and continuous pain in the cheekbones, forehead, or bridge of the nose. The pain usually worsen with sudden head movement and generally occurs with other sinus symptoms, such as nasal discharge, feeling of fullness in the ears, fever, and facial swelling. <sup>[3]</sup> Cluster headaches are relatively infrequent. Cluster headaches appear in groups or clusters lasting weeks or month. The pain is extremely intense but the attack is brief. It remains no more than an hour or two. The pain concentrate around one eye, and this eye may become inflamed and watery. <sup>[2]</sup> The pathophysiology of headache including tension-type headaches, migraine, and cluster type headache, is not fully understood. Migraine and cluster headaches are thought to begin in the brain as a neurologic dysfunction, following the involvement of the trigeminal nerve and cranial vessels. In cluster headache, most individuals have overactivity of the parasympathetic nervous system. Tension-type headache can be particularly a central neurologic disturbance or can occur as the result of increased cervical and pericranial muscle activity, like caused by flexion-extension injury of the neck, poor posture, or anxiety with increased clenching or grinding of the teeth. <sup>[4]</sup> Secondary headache results from any disease or other medical conditions, such as infection or increased pressure in the skull because of a tumor. These account for fewer than 10% of all headaches. The causes of secondary headache include Brain infection like meningitis or encephalitis,

or abscess, Brain tumor, Hydrocephalus. Problems with the blood vessels and bleeding in the brain, such as arteriovenous malformation (AVM), brain aneurysm, or stroke, Pseudomotor cerebri, Subdural hematoma, Very high blood pressure.<sup>[5]</sup> Treatment of headache has two aspects. For most patients, it is sufficient to self-treat headache events. Patients need advice regarding which analgesics are effective at which dose. If analgesic therapy fails, migraine attacks should be treated with specific migraine drugs, such as the triptans. In case where migraine attacks or chronic tension-type headache, are frequent, preventive therapy is implemented. Over-the-counter analgesics or pain-relieving medications to treat headaches that are most commonly used are non steroidal anti-inflammatory drugs (NSAIDs) including paracetamol, aspirin, ibuprofen, naproxen, diclofenac, and combination of paracetamol and caffeine. <sup>[6]</sup> According to the different researches, results found that the estimated prevalence rate of headache in medical students was 85.5% and is a major health problem amongst medical students. It is inappropriately treated and there is strong impact of family history.<sup>[7]</sup> In another study the estimated prevalence rate of headache in school children was 85.5%. Of them 43.1% had mild, 46.6% had moderate and 8.8% had severe headache. Headache is a major health problem in school children. It is inappropriately treated and there is strong impact of family history. <sup>[8]</sup>

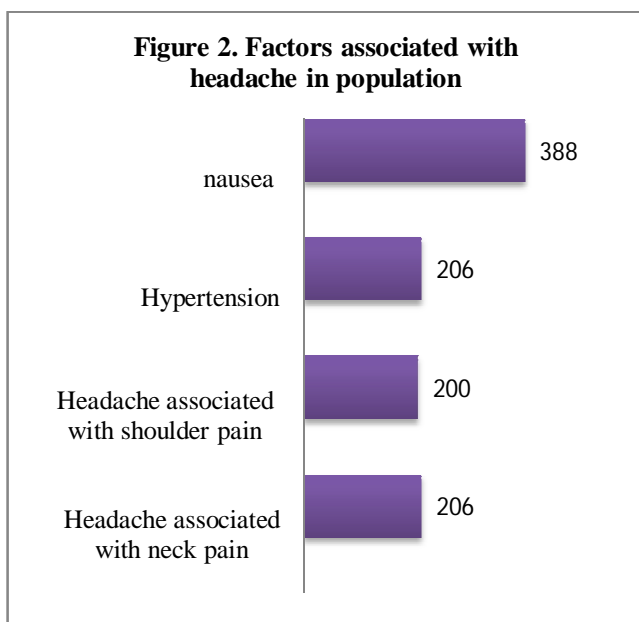
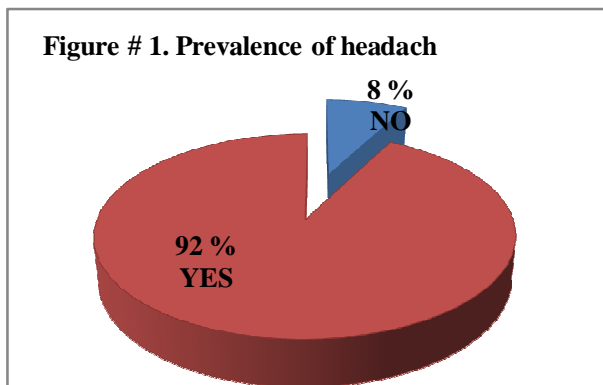
## METHODOLOGY

Survey on prevalence of headache and pattern of OTC used medicines has been conducted in general population and sample size is 1000. The pattern of study is cross sectional type in order to assess the prevalence of headache among our population and to evaluate the pattern taken by the individuals for treating headache. Subjects are selected irrespective of age, gender and an exclusion criterion is individuals with major pathological condition. The turn-out of the whole survey has been tabulated and the outcomes are scrutinized.

## RESULT AND DISCUSSION

The desired survey on prevalence of headache and pattern of OTC used has been conducted successfully, we, the enumerators have got the following results mentioned below from our cross section study. From our study that has been conducted on generalized subjects (age group) it is estimated that 92.4 % individuals suffer from headache while 7.6% may not ever feel headache. A study has been conducted by FMH college of medicine and dentistry, Lahore on prevalence of headache among medical students has found that prevalence rate of 84.5% <sup>[7]</sup> Another study conducted on prevalence and patterns of headache in school children by DMC. Department of neurology showed the prevalence rate of 85.5%. <sup>[8]</sup> According to our study sequel 42% suffers headache due to work load, 36% may not sleep well, 25% may under stress. Workload is basically responsible for depression and insomniac condition. According to the study conducted on 18<sup>th</sup> may 2005, published in the journal of headache and face pain, sleep apnea is found in patients with chronic headache, especially nocturnal headache. <sup>[9]</sup> Another study sleep and headache syndrome a clinical review conducted on 20<sup>th</sup> may 2005, published in journal of headache and face pain as a consequence found that sleep is effective in terminating events of headache. <sup>[10]</sup> According to study, cluster headache is a risk factor for depression so that it is concluded that these two are interlinked. According to our study 9.9% individuals suffer headache due to pollution. A study is conducted in 26<sup>th</sup> June 2002 published in the journal of headache and face pain. To clarify the possible relationship between pollution and worsening of headache in the city of slum and they found that isolated increase in Nitrogen dioxide induce headache for a couple of hours after the peak concentration was reached.<sup>[11]</sup> The extent of pollution causing headache may increase with time as our surrounding is getting pronounced increased in pollution. According our study turn-out 22.5% individuals suffer from headache due to eyesight weakness. As per study conducted in May 1960, published in the official Journal of the American academy of neurology or neurologic aspects of temporal arthritis, they found that from the year 1951 -1959, 175 patients with temporal arthritis seen in myoclinic, out of 175 at least 111 of these patients referred to clinic with the symptoms suggesting possible involvement of the CNS out of these 41 patients temporal arthritis ( which may

symptom as reduced vision or ESW) suffer headache and 37 due to blindness. [12] According to our findings 7.3% individuals suffered headache associated with migraine. A study on prevalence of headache and migraine in school children from US library of medicine, National institute of health, results obtained that migraine is a common cause of headache in children and causes significant reduced attendance in school. [13] According to our results 5.1% individuals have seen headache due to the reason of increased B.P. a relevant study is conducted in the Department of Neurology, University hospital in New York., it is found that hypertensive encephalopathy due to the reason that intracranial pressure is increased significantly due to HTN. [14]



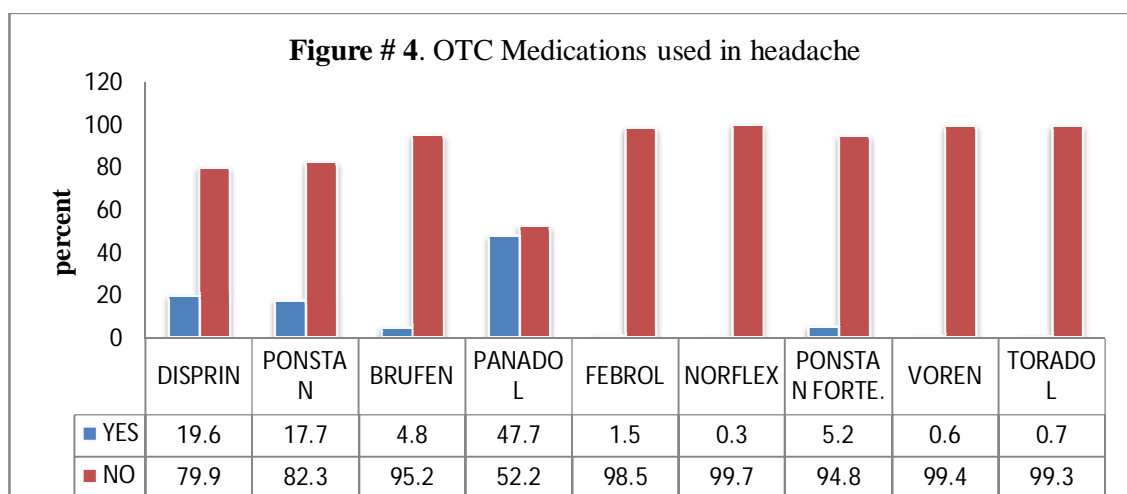
**Table 2: Major Reasons Reported by General Population for headache**

| Reason of Headache | Frequency(n) |
|--------------------|--------------|
| Depression         | 250          |
| Workload           | 424          |
| Pollution          | 99           |
| Sleeping disorders | 366          |
| Flu                | 226          |
| Eye sight weakness | 225          |
| Migraine           | 73           |
| Noise sensitivity  | 326          |

Cumulative percentages do not make 100% because a single participant reported more than one reason for headache.

Simultaneously here it is also found that antihypertensive also precipitated headache. As it is also it is found that migraine exists in our individuals results from some individuals has shown that they might have migraine but they do not highlight that, there might be a reason of lack of awareness. According to the study from Orphanet Journal of rare disease, it is accounted that migraine is different from common headache at some points, it is resulted that migraine starts from adolescence, there is no longer remission period between consecutive events of migraine attacks may be long as 4 hours to 24 hours. Migraine may begin in laterally, but may radiate to the entire head region. It is found that the clinical criterion of migraine is photophobia and nausea but chronic headache may also accompanied by these three up to 50%. Along with these there is also existences of autonomic signs were lacrimation and nasal congestion. [15]

| Table 3. Different Demographic variables affecting Headache                                  |               |     |         |
|--|---------------|-----|---------|
|  |               | N   | P-Value |
| Age  | 13-18         | 110 | 0.01    |
|  | 19-24         | 371 |         |
|  | 25-30         | 192 |         |
|  | 31-36         | 104 |         |
|  | 37-42         | 143 |         |
| Gender   | Male          | 121 | 0.00    |
|  | Female        | 799 |         |
| Occupation   | Student       | 402 | 0.04    |
|  | House Wife    | 190 |         |
|  | Labour/clerk  | 77  |         |
|  | Job-Academics | 110 |         |
|  | Job-Industry  | 141 |         |
| Chi-Square test is applied to find out significant relationship between different variables. |               |     |         |



According to our results 14.4% individuals sensitive to light, and 32.6 % individuals are sensitive to noise, on headache. A study is conducted on 24<sup>th</sup> may 2006, published in journal of head and face pain to investigate that how noise (trigger) acquired the capacity to precipitate headache and results suggest that the best way to prevent migraine/headache is to avoid trigger.<sup>[16]</sup> According to our survey 20.6% individuals suffers headache associated with neck pain and 20% with shoulder pain and 8.1% vomit also. A study is conducted in1993 published in Scandinavian journal of primary health care to describe prevalence of reported headache and noise or shoulder pain & they found that 6% males reported weekly or more frequently headaches associated with noise pain and shoulder pain & 39% women reported daily or monthly headaches associated with noise pain and shoulder pain. <sup>[17]</sup>According to our study many individuals uses tea (caffeine) as home remedy. A study is conducted in 2000, referred from clinical pharmacology and therapeutics to evaluate the effectiveness of caffeine as an adjuvant to ibuprofen and results shows that this provided significantly greater analgesic activity than ibuprofen alone. <sup>[18]</sup> Hence now a day's caffeine (tea) is widely used to treat headache symptomatically.

According to our survey turn-out 72.5% individuals prefer self medication to treat headache. And 14.4% uses prescribed medicines to treat headache. This may potentially increase the risk of adverse drug reactions of OTC medicines used in headache. However it should be notified that this use OTC medication is limited to be only on severity of headache regardless of habitually.

A study is conducted in Pokhara valley, Western Nepal on self medication and non-doctor prescription practices in pokhara, referred from BMC family practices and it is concluded that self-medication and non-doctor prescribing are common in pokhara specially antimicrobials analgesics, herbal remedies.<sup>[19]</sup> Another study conducted in Agha Khan University, published in the journal of the Pakistan medical association on self-medication amongst university student of Karachi and they found that the prevalence of self medication was 76% which is high in educated youth.<sup>[20]</sup> Another study referred from US national library of medicine, national institute of health, is conducted on "pain relief for headaches, is self medication a problem" results show that 3.2 million Canadians suffer from migraine attacks. Among those 90% uses over-the-counter drugs and 45% use it as non doctor prescribed drugs.<sup>[21]</sup>

According to our survey sequel it has been shown that 47.7% i.e. the highest percentage, individuals use paracetamol (panadol) as over-the-counter drug in headache. A study from US national library of medicine, national institute of health, on "clinical management of young patients presenting with headache" and it is found that paracetamol, acetyl salicylic acid and ibuprofen are more useful for treating migraine attacks.<sup>[22]</sup> Beside of its therapeutic efficacy, paracetamol may potentially affect the individual's renal and hepatic status adversely while using on long term basis.

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