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AWARENESS AND APPROACH TO HEADACHE: A SURVEY OF FAMILY PHYSICIANS IN PAKISTAN

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ABSTRACT

Background & Objective: Headache is one of the most common complaints in the general population and the most common symptom for a neurology out-patient visit. According to the WHO, the prevalence of adults complaining of recent headache (at least one episode within the last year) is 47%. Despite the large burden of disease, headaches are often overlooked, underdiagnosed and under-resourced. There are several reasons that include lack of awareness among the general public and healthcare professionals and lack of training at both undergraduate and post-graduate level. There is limited data available from many third world countries including Pakistan. Family Physicians (FPs) equivalent to primary care physician in the UK (GP) see the vast majority of headache disorders in Pakistan, their competency in recognizing headache disorders bears huge impact on the care received by the patients.

Methods: This is the first cross sectional survey of Family Physician's (FPs) randomly selected from four provinces i.e. Punjab & Sindh 200 each, KPK/ Baluchistan 150 & 50 FPs respectively were randomly selected of which 449 family physicians consented to participate during 2013. Data was collected from FPs through questionnaire contained 27 items.

Results: Of the 600 randomly selected FPs approached, 449 responded to a questionnaire. On the basis of history alone 278 (62%) responders were able to differentiate between migraine, tension type and cluster headache(s),305 (68%) were able to identify migraine, 337 (75%) were able to identify tension type headache and 233 (52%) were able to identify cluster headaches. Triptans as being the most effective treatment for acute migraine identified by 157 (35%) while 229 (51%) respondents chose NSAIDs, 72 (16%) chose ergotamine while 85 (19%) choose topiramate. For the base line investigations, 292 (65%) mentioned that they ordered in less than 10 percent of their headache patients. When looking at referrals for refractory headaches, 287 (63%) would refer to a neurologist.

Conclusion: This is the first study of family physicians awareness and approach to headache in Pakistan. Majority of FPs can differentiate between migraine, tension type and cluster headaches. These findings may have important implications for undergraduate and post graduate curriculum development, continued medical education priorities and for advocacy and policy making.

Key words: Headache, family physicians, Pakistan, awareness,

INTRODUCTION: Headaches are one of the most common complaints of the nervous system that people suffer. According to the WHO, as of 2012, the prevalence of adults complaining of recent headache (at least one episode within the last year) is 47%, while half to three quarters of the adults aged 18–65 years in the world have had headache in the last year (1). Estimates for prevalence of all types of headache are even higher in the Eastern Mediterranean region, which Pakistan belongs to, at 78.8% (2) Headaches are generally not life threatening, they are certainly distressing and debilitating, with migraine alone accounting for 1.3% of years lost to disability (YLDs). (3). There is, however, very limited data available from Pakistan on the subject, with one study finding the prevalence of headache episodes being 81.7% in

adults visiting three different medical camps set up in different areas within the last year(4), another found the prevalence of headache in school going children between the ages of 12 – 20 years being 85.5%(5).

Despite the large burden of disease, headaches often go overlooked and under diagnosed due to several reasons including lack of physician knowledge, lack of public awareness and lack of funding for healthcare (1). According to the WHO, an estimated 50% of sufferers of headache self treat, while only 10% seek help from neurologists (2). In a developing country such as Pakistan, where there is a lack of resources and trained specialists, as well as awareness in the general public, these disorders are usually treated by primary care physicians. In such cases, knowledge and awareness of the diagnosis and treatment for headache disorders among primary care physicians becomes an important issue.

Deficiencies in knowledge among primary care physicians of Pakistan in dealing with common ailments have been identified in the past, with one study showing that only 28.6% of family physicians had adequate knowledge of the core concepts of asthma(6) and another study showing that only 61.2% of family physicians could correctly identify the therapeutic effects of medications they were prescribing (7). Only 46% could identify all five core symptoms of a stroke in another study (8). Another survey of randomly selected family physicians found that 30.6% and 79.7% of FPs used incorrect BP cutoffs to diagnose hypertension in patients <60 and ≥ 60 years, respectively(9). There is, however, scarcity of information about patterns of diagnosis and management of headache in Pakistan. The situation around the world shows marked deficiencies in practice of primary care physicians when dealing with headaches, with one Italian study showing that 64.37% of chronic daily headache sufferers were misdiagnosed by their GPs (10). A German study that used ICHD II to diagnose migraine sufferers and compared their diagnosis with the rate of self awareness among patients suffering from migraine and physician diagnosis of migraine within the last 12 months found that only 62.5% of migraine sufferers were correctly diagnosed by their physicians (11). The situation is similar for neighboring countries with a scarcity of data available to draw accurate conclusions, with one study from India identifying gaps in both physicians' and patients' knowledge about headache disorders (12)

Design: This was cross sectional study carried out across Pakistan.

Methods:

The study survey was conducted among the family physicians to assess the knowledge about the symptoms of different types of headaches, the type of medications available for treatment and prevention as well as information about their practice type with patient flow and sources of information they utilize.

A team of neurologists developed a questionnaire in English. The self administered questionnaire was pretested in a pilot study and went through revision to optimize the response rate and reduce the number of irrelevant items. The final questionnaire contained 27 items to elicit information on: (i) Physician Practice (place of practice, practice setting i.e. teaching versus non teaching, average number of patients seen daily, year of graduation from medical school) (ii) Knowledge about headache symptoms, risk factors and presentation (iii) Assessment of patient with headache including ability to diagnose headache type (iv) Knowledge and practice of current headache guideline by IHS and management strategies (v) sources, they use to update their knowledge regarding stroke (i.e. seminar, lecture or medical journals)

In calculating the sample size for physicians survey of compliance to guidelines, 75% were expected to follow these guidelines, with a bound on error of 0.04 (4%) with 95% confidence interval, the maximum sample size came out as to be 451 ( ). After accounting for non-response rate of about 10%, the minimum sample size required come out to be approximately 496.

The study of the licensed FPs in Pakistan was conducted in all four provinces including urban and rural areas of Pakistan during 2013. There were 122,000 physicians registered by PMDC i.e. about 61,000 physicians were involved in general practice (working as FPs).16 A sample of six hundred physicians based on the population of the province i.e. Punjab/ Sindh provinces 200 FPs each while Khyber Pakhtun Kha/ Baluchistan provinces 150 & 50 FPs respectively were randomly selected of which 449 family physicians consented to participate. Each FP was visited by a trained research officer who administered the standardized questionnaire. The average time to complete the questionnaire was 10-15 minutes.

Study design was approved by Ethical Review Committee of AMTF. Logistic support for data collection was provided by Hilton Pharmaceuticals.

Results:

Demography of responders: Of the 600 physicians approached with questionnaires, 449 responded (See Table 1 : Demographics of Respondents); the type of practice was divided with 90 (20.04%) of respondents working at government hospitals, 86 (19.15%) working at private hospitals, 26 (5.8%) worked at teaching hospitals while 247 (55.4%) worked at clinics.

Access to training resources: To evaluate their current understanding on headache disorders and access to training we found only 178 (39.6%) had attended a lecture or seminar on headache in the previous year and only 193 (43%) had read a review article.

Case load: Most physicians reported frequent encounters with headache patients. Type of headache patients seen by physicians is provided in table 2.

Ability to identify primary headache disorder: Only 305 physicians (68%) were able to identify Migraine, 337 (75%) were able to identify tension type headache and 233 (52%) were able to identify cluster headaches based on three most important features.

Prescribing pattern: Physicians' choice of medication for acute migraine is listed in table 3. When asked what they would prescribe to a young woman presenting with a three hour history of severe headache, vomiting and photophobia, 184 (40.0%) chose NSAIDs, 119 (27.2%) chose injectable diclofenac, 104 (23.7%) chose triptans while 66 (15.1%) chose antidepressants. When surveyed about why triptans were not prescribed to patients with migraine, 180 (45.9%) identified cost as the reason, 101 (25.8%) said they had no previous experience with triptans, 48 (12.2%) were not even aware of the medication, 46 (11.7%) cited side effects as the reason for not prescribing triptans and 21 (5.4%) thought that triptans weren't effective in the treatment of migraine while 22 (5.6%) thought that triptans were not indicated for the treatment of acute migraine.

Experience of refractory migraines: The frequency of cases of refractory migraines encountered by the physicians was low, with 226 (50.3%) reported seeing less than 10 percent, 151 (22.6%) seeing 11 – 20 percent, and 29 (6.5%) 21 – 50 percent of cases of resistant migraine from all complaints of migraine seen.

Investigation pattern: When surveyed for frequency of baseline investigations performed in patients for headache, 290 (64.6%) physicians reported in less than 10 percent of their patients, 105 (23.4%) in 11 – 20 percent, 30 (6.7%) in 21 – 50 percent while only 5 (1.1%) ordered them for 51 – 100 percent of their patients. 292 (65.0%) physicians ordered imaging (CT or MRI) in less than 10 percent of their headache patients, 104 (23.2%) on 11 – 20 percent, 24 (5.3%) on 21 – 50 percent while only seven (1.6%) ordered CT or MRI scans for more than 50% of their patients. The rationale for imaging was to exclude a brain pathology in 202 (48.2%), brain tumour in 146 (34.8%) while in 77 (18.4%) the scans were ordered on patients' request with another 43 (10.3%) to reassure their patients and 35 (8.4%) purely because they could afford to have one.

Referral pattern: Although majority would report treating their own headache patients; if referred 267 (62.7%) would refer to a neurologist, 68 (15.9%) to a neurosurgeon, 65 (15.2%) referring to a psychiatrist, while 47 (11.2%) will refer to an internist. The frequency for referral was diverse with only 16 (3.6%) had never referred a patient, 99 (22.0%) rarely referred patients, 54 (12.0%) referred less than once a month, 103 (22.9%) referred once a month, 92 (20.4%) referred once a week while only 63 (14.0%) referred more than once a week.

Discussion

Our study reaffirmed the widespread burden of headache disorders in our population, when comparing the distribution of different headache types seen by family physicians, we compared the number of practitioners who reported seeing 21 – 50 patients of each headache type and found that 68 (15.1%) reported seeing 21 – 50 migraine patients per month, as compared to 137 (30.5%) reporting tension type headache cases, 84 (18.7%) reported seeing sufferers mixed headache type, 14 (3.1%) cluster headache patients, 47 (10.5%) reported seeing patients with headache of nonspecific type, 55 or (12.2%) saw patients of stress headaches while 26 (5.8%) saw patients of sinus headaches. This is in contrast to an earlier study conducted in 2009 in Pakistan which found that migraines were the most common type of headache people suffered from with a prevalence of 80.8%, tension type headache being the second most common at a prevalence of 22.7% and cluster headaches fairly uncommon, with only a prevalence of 1.6% (13)

277 (61.7%) of family physicians said that they could differentiate between the different types of headaches. Based on our evaluation 75% were able to diagnose Tension type headache, 63% were able to diagnose Migraine and 52% were able to diagnose cluster

headaches based on most important clinical features. We think this ability is sub optimal. This leads to incorrect diagnosis and improper treatment. Large number of migraine patients was wrongly diagnosed as tension type headache in our study. This is probably a reason why Tension headache is over represented in community based studies. Almost half of respondents were not able to diagnose cluster headache.

When looking at treatment patterns we found that only 153 (34.6%) physicians identified triptans as being the most effective treatment for acute migraine. This reflects a common attitude seen in several parts of the world amongst primary physicians, a study in Spain which surveyed 105 GPs, found that with the exception of 2, all recommended NSAIDs as an effective treatment for headache, while 67 of 105 GPs recommended triptans(14), a recent Portugese study which surveyed 348 physicians to see their own headache status and their knowledge about treatment options; 63 reported having migraines, of these, only 20% reported using triptans to treat their headaches(15), this is however, in contrast to a French study which surveyed GPs and showed that greater than 75% identified triptans as appropriate treatment for migraines(16). The reasons identified for the low usage of triptans in our study included high cost, not knowing what triptans are, the side effect profile, belief that triptans are not effective and the habit of never having prescribed triptans before.

When looking at the frequencies of scans ordered for patients, we found that a 24 (5.3%) ordered CT/MRI scans in 21 – 50 percent of their patients. The yield of these investigations is however debatable. A British study which looked to examine neuro-radiological investigations ordered for patients of headache found that of 895 patients seen with complaints of headache, 270 (30.1%) were investigated with imaging studies, of these only 5.6% showed positive findings but only 1.9% showing findings of clinical significance(17), an earlier Pakistani study which looked at 100 pediatric patients who had been sent to the Radiology department to be investigated for their headache complaints, only 4 had positive findings (18). When looking at referral patterns, our study found that when faced with a refractory headache, 267 (62.7%) would refer their patients to a neurologist but referral trends themselves were found to be varied with 103 (22.9%) reporting the need for referring their patients once a month while only 16 (3.6%) had never referred their patients, and 63 (14.0%) needing to refer their patients to specialists more than once a week.

This study had several limitations. We were unable to achieve our target sample size. Most of respondents were urban based with only 5% sample from rural based physicians. These findings are probably more representative of urban family physicians. Since our study was based on the filling of a self-reporting questionnaire, a reporting bias by physician cannot be excluded. Despite these limitations, this is the first study of family physicians awareness and approach to headache in Pakistan. These findings may have important implications for undergraduate and post graduate curriculum development, continued medical education priorities and for advocacy and policy making.

Tables:

Table 1 : Demographics of respondents (physicians)

	N	Percentage
Gender		
Male	421	93.7
Female	28	6.2
Age, in years	45.05 ± 9.5	
Place of Practice		
Urban	425	94.65
Rural	24	5.35
Number of adult patients seen/day	48 ± 32	
Years since graduation	19 ± 9	

Table .2 Distribution of Patients Seen According to Headache Type

	N	Percentage
Migraine		
Less than10/month	207	46.1
11-20/month	113	25.2
21-50/month	68	15.1
51-100/month	20	4.5
More than 100/month	1	0.2
Tension type headache		
Less than 10/month	142	31.6
11-20/month	114	25.4
21-50/month	137	30.5
51-100/month	20	4.5
More than 100/month	0	
Mixed(migraine +TTH)		
Less than 10/month	164	36.5
11-20/month	113	25.2
21-50/month	84	18.7
51-100/month	10	2.2
More than 100/month	0	

Cluster headache		
Less than 10/month	298	66.2
11-20/month	14	3.1
21-50/month	0	0
51-100/month	0	0
More than 100/month	0	0
Non specific		
Less than 10/month	196	43.7
11-20/month/month	85	18.9
21-50/month	47	10.5
51-100/month	3	0.7
More than 100/month		
Stress related headache		
Less than 10/month	162	36.1
11-20/month	138	30.7
21-50/month	55	12.2
51-100/month	8	1.8
More than 100/month		
Sinus headaches		
Less than 10/month	205	45.7
11-20/month	105	23.4
21-50/month	26	5.8
51-100/month	3	0.7
More than 100/month		

Table 3: Medication for Acute Migraine Chosen b Physicians

Medicine	N	Percentage
Paracetamol	81	18.3%
NSAIDs	225	50.9%
Beta Blocker	54	12.2%
Benzodizapines	34	7.7%
Anti depressants	72	16.3%
Triptans	153	34.6%
Ergotamine	69	15.6%
Pizotifen	25	5.7%
Valporate	52	11.8%
Amitryptaline	16	3.6%
Topiramate	84	19.0%
Inj. Diclofenac	5	1.1%
Anti Emetic	1	.2%

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Author's contribution:
Abdul Malik; study concept and design, data acquisition, data analysis, manuscript writing, manuscript review, responsible and accountable for the accuracy/ integrity of the work
Safia Awan; data analysis, manuscript writing, manuscript review
Aziz Sonawalla; study concept and design, manuscript writing, manuscript review
Fayyaz Ahmed; manuscript writing, manuscript review
Mohammad Wasay; study concept and design, data analysis, manuscript writing, manuscript review