

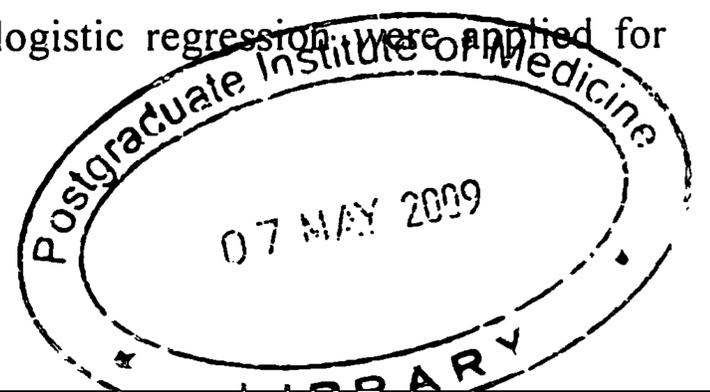
## ABSTRACT

**Introduction** – World Health Organization has identified headache disorders as a public health problem with substantial disability. Headache disorders may be primary or secondary. Primary headache disorders account for more than 90% of all headache complaints. Out of these migraine and tension-type headache (TTH) are the most common primary headache disorders.

**Objectives** – Main objective of the study was to determine the period prevalence of migraine and TTH among 20-59 year old adults in the Gampaha district. Other objectives were development and validation of a screening instrument named *HHQ-Sri Lanka*<sup>®</sup> to determine migraine and TTH in the community, determination of treatment seeking behavior and correlates of migraine and TTH and comparison of health related quality of life among adults with migraine and those free of a headache disorder.

**Methodology** – The study consisted of three phases. First was to develop and validate *HHQ-Sri Lanka*<sup>®</sup> to identify sufferers of migraine and TTH, second to determine the prevalence, treatment seeking behaviour and correlates of migraine and TTH and the third to compare the quality of life among migraineurs and those free of headache disorders. The interviewer administered screening instrument was developed and validated against the clinical diagnosis made by the Consultant Neurologist based on the International Classification of Headache Disorders (ICHD II), which was considered as the gold standard. By using the validated screening instrument, period prevalence of migraine and TTH among 20 - 59 year old adults in the Gampaha district was determined through a cross sectional descriptive survey. Single stage cluster sampling technique was used to identify the study sample. An analytical cross sectional study was carried out using the validated Sinhalese translation of SF-36 (Version-1), to compare the quality of life between migraineurs and those free of headache. Sample sizes were computed for all the three phases of the study.

Bivariate and multivariate analysis was performed to determine the associations between respective variables. Chi squared test and multiple logistic regression were applied for



categorical data while Student's T test and multiple linear regression were applied for numerical data.

## **Results**

### **Validity and reliability of the screening instrument**

Sensitivity of *HHQ-Sri Lanka*<sup>®</sup> in identifying migraine was 89.8% (95% CI: 76.8 - 96.2) and the specificity was 95.7% (95% CI: 91.2 - 98.2). Positive and negative predictive values were 88.0% (95% CI: 76.7 - 95.0) and 96.4% (95% CI: 92.1 - 98.7) respectively.

Sensitivity of *HHQ-Sri Lanka*<sup>®</sup> in identifying TTH was 92.9% (95% CI: 86.5 – 96.9) and the specificity was 84.1% (95% CI: 75.3 – 90.6). Positive predictive value was 86.8% (95% CI: 79.3 - 92.3) while the negative predictive value was 81.4% (95% C I: 83.7 – 96.1)

Kappa coefficients ranged between 0.71 to 1.0 for the individual question items in *HHQ-Sri Lanka*<sup>®</sup>.

### **Period prevalence of migraine and TTH**

The total number of individuals identified was 2075 and out of that 1854 participated in the study giving a response rate of (89.4%).

Crude period prevalence of migraine among 20 – 59 year adults in the Gampaha district was 10.4% (95% CI: 9.0 – 11.8). Standardized (adjusted according to the age and sex distribution of the population of the Gampaha district) period prevalence of migraine among 20 – 59 year adults in the Gampaha district was 9% (95% CI: 9.0 – 9.1). Prevalence of migraine was significantly ( $p < 0.001$ ) higher among females (15.3%) compared to males (3.4%). Prevalence rates of migraine among age groups were not significantly different ( $p = 0.21$ )

Crude period prevalence of TTH among 20 – 59 year adults in the Gampaha district was 20.1% (95% CI: 18.3 – 22.0). Standardized (adjusted according to the age and sex distribution of the population of the Gampaha district) period prevalence rate of TTH among 20 – 59 year adults in the Gampaha district was 20.0% (95% CI: 19.9 – 20.1).

Prevalence of TTH was significantly ( $p=0.001$ ) higher among females (22.7%) compared to males (16.5%). Prevalence rates of migraine among age groups were not significantly different ( $p = 0.71$ )

### **Treatment seeking behavior**

Self medication practices were significantly higher ( $p<0.001$ ) among migraineurs (93.2%) than TTH sufferers (77.5%). Paracetamol was the commonly used self medication among adults with migraine (91.1%) and TTH (76.6%). Analgesic overuse among adults with migraine (1.6%) and TTH (0.3%) was not observed in significant proportions.

Among the adults with migraine and TTH, 63 % and 30% has received allopathic treatment respectively during the last year. Primary care medical officers were the commonly consulted allopathic practitioners.

Headache episodes persisting for more than 12 hours was significantly ( $p=0.01$ ) associated with consultation behaviour among adults with migraine.

Consultation behaviour of adults with TTH was significantly associated with; female sex ( $p<0.01$ ), experience of headache  $\geq 5$  days, headache episodes which required to stop work ( $p<0.001$ ), headache episodes which was aggravated by routine activities ( $p<0.001$ ) and headache associated with phonophobia ( $p<0.03$ ). Seven percent (6.7%) of migraineurs and 3.8% of sufferers of TTH were on prophylactic drugs.

### **Correlates of migraine and TTH**

Female sex (OR=2.8; 95% CI: 1.5 - 5.3), exposure to sunlight ( OR=4.0; 95% CI:2.4 – 6.6 ), excess physical exertion (OR=1.7; 95% CI:1.1 – 2.7), reduction of sleep (OR=2.2; 95% CI:1.4 – 3.4 ), delaying meals (OR=2.6; 95% CI: 1.7 – 4.0), traveling in vehicles (OR=2.7; 95% CI: 1.7 – 4.2), consuming pineapple (OR 41.3; 95% CI: 2.6 – 666.3) and family history of recurrent headache (OR=2.6; 95% CI: 1.6 – 4.0) showed significant independent associations with migraine following removal of the confounding effect of other variables.

Being a non Buddhist (OR=1.4; 95% CI: 1.04 – 1.82), exposure to sunlight (OR=2.9; 95% CI: 2.1 – 3.8). excess physical exertion (OR=1.7; 95% CI: 1.2 -2.4), reduced sleep

(OR=2.2; 95% CI: 1.6 – 2.8), walking a long distance (OR=1.6; 95% CI: 1.01 – 2.66) and neck pain (OR=2.3; p= 1.1 – 4.7) showed significant independent associations with TTH following removal of the confounding effect of other variables

### **Quality of life**

Quality of life is significantly reduced among migraineurs in comparison to those free of headache in the following domains measured using the Sinhalese validated version of SF – 36: General physical health (p<0.001), physical functioning (p<0.001), role limitation due to physical problems (p<0.001), bodily pain (p<0.001), general mental health (p<0.001) and vitality (p<0.001). Domain of role limitation due to emotional problems (p=0.11) and scale of health transition (p=0.21) were not affected by migraine.

**Conclusions:** - *HHQ-Sri Lanka*<sup>®</sup> was found to be valid and reliable to be used in the community setting for detecting migraine and TTH. Standardized prevalence of migraine and TTH were 9% and 20% respectively. Self medication practices were significantly higher among migraineurs than TTH sufferers. Female sex, exposure to sunlight, physical exertion, reduced sleep, delaying of meals, traveling in vehicles, consuming pineapple and family history were the correlates for migraine while being a non Buddhist, exposure to sunlight, excess physical exertion, reduced sleep, walking a long distance and neck pain were the correlated for TTH. Quality of life was observed to be significantly lower among migraineurs than those free of headache disorders.

**Recommendations** – 1) To use *HHQ-Sri Lanka*<sup>®</sup> as an screening instrument to determine migraine and TTH by the primary care physicians 2) Health education programs to increase awareness among the general population with regard to characteristics, self care and medication, treatment and prophylaxis available and prevention in terms of modifiable risk factors of Migraine and TTH 3) Regular updates for primary care physicians regarding primary headache disorders and 4) Continuation of research specifically to compute the burden of disease related to primary headache disorders.

**Key words:** - Prevalence study, *HHQ-Sri Lanka*<sup>®</sup>, Screening instrument, Migraine, Tension type headache , Quality of life