

## DIFFERENCE OF PAIN INTENSITY IN TENSION TYPE HEADACHE PATIENTS FOCUSING ON THE PERSONALITY

M. Hasan Machfoed<sup>1</sup>, Azimatul Karimah<sup>2</sup>, Devi Ariani Sudibyo<sup>1</sup>

<sup>1</sup>Department of Neurology, <sup>2</sup>Department of Psychiatry,  
Faculty of Medicine, Airlangga Univesity, Dr Soetomo Hospital, Surabaya

### ABSTRAK

*Tension-type headache (TTH) adalah gangguan sakit kepala yang paling umum. Hubungan antara sakit kepala dan gangguan kejiwaan telah mendapatkan banyak perhatian. Alasan untuk memeriksa kepribadian pada orang dengan gangguan sakit kepala termasuk untuk menentukan apakah karakteristik kepribadian mempengaruhi seseorang untuk menderita gangguan sakit kepala, apakah gangguan kepribadian merupakan konsekuensi dari gangguan sakit kepala, atau apakah yang mendasari (atau komorbiditas) mekanisme kausal ada, dan menyebabkan kedua kondisi bersamaan. Tujuan dari penelitian ini adalah untuk menentukan perbedaan intensitas nyeri dengan berfokus pada tipe kepribadian pada pasien dengan TTH. Penelitian analitik cross-sectional menggunakan metode consecutive sampling telah diterapkan. Responden direkrut dari pasien rawat jalan neurologis klinik rumah sakit Dr Soetomo Surabaya, sejak September 2012-Februari 2013. Intensitas nyeri diukur dengan menggunakan Skala Analog Visual (Visual Analog Scale, VAS), sedangkan Minnesota Multiphasic Personality Inventory-2 (MMPI-2) digunakan untuk menentukan ciri-ciri kepribadian dari para peserta. Data disajikan secara deskriptif dan SPSS 17 digunakan untuk menganalisa data. Dari enam puluh pasien yang terdaftar dalam penelitian ini, perempuan memiliki prevalensi lebih tinggi dari laki-laki TTH (68,3% : 31,7%). Usia rata-rata adalah 36,35 ± 10,050 tahun. Skor VAS rata-rata adalah 5,608 ± 1,8765. Episode kronis dari TTH adalah kondisi klinis yang paling umum (61,7%). Dari analisis regresi linear, hipokondriasis secara statistik signifikan dengan skor VAS ( $p < 0,05$ ) dibandingkan depresi dan histeria. Skor VAS memiliki signifikansi terhadap kepribadian hipokondriasis. (FMI 2013;49:259-262)*

**Kata kunci:** Tension-type headache, kepribadian, intensitas nyeri

### ABSTRACT

*Tension-type headache (TTH) is the most common headache disorders. The association between headache and psychiatric disorders has received considerable attention. Reasons for examining personality in persons with headache disorders include determining if personality characteristics predispose one to develop headache disorders, if personality disturbance is a consequence of the headache disorder, or if an underlying (or comorbid) causal mechanism exists producing both conditions concurrently. The purpose of this study was to determine the difference in pain intensity focusing on personality type in patients with TTH. Cross-sectional analytic study using consecutive sampling method has been applied. Respondents were recruited from Neurologic outpatient clinic of Dr. Soetomo General Hospital, Surabaya, since September 2012-February 2013. Pain intensity was measured using Visual Analog Scale (VAS), while Minnesota Multiphasic Personality Inventory-2 (MMPI-2) was used to determine the personality traits of the participants. Data was displayed descriptively. SPSS 17 was used to analyze the data. Sixty patients were enrolled in this study, female has higher TTH prevalence than male (68.3% : 31.7%). The mean age was 36.35 ± 10.050 years. VAS mean score was 5.608 ± 1.8765. Chronic episode of TTH was the most common clinical feature (61.7%). From the linear regression analyses, hypochondriasis was statistically significant with VAS score ( $p < 0.05$ ) than depression and hysteria. VAS score have significancies with hypochondriasis personalities. (FMI 2013;49:259-262)*

**Keywords:** Tension-type headache, personality, pain intensity

**Correspondence:** M. Hasan Machfoed, Department of Neurology, Faculty of Medicine, Airlangga Univesity, Dr Soetomo Hospital, Surabaya

### INTRODUCTION

Tension-type headache (TTH) is the most common form of headache (Ertas et al 2012). Recent summaries of international population-based studies of headache and specific headache subtypes showed that approximately 50 percent of persons in the general population suffered from headaches during any given year, and that more

than 90 percent reported a lifetime history of headaches. About half of those patients, reported headaches suffering from TTH (Merikangas et al 2009). The 1 year prevalence of TTH varies between 30-80%. The female to male ratio of TTH is 5:4. In the cross-sectional epidemiological study, the average age of onset is 25-30 years old with peaks between ages 30 to 39 years, and decreases slightly with age (Bendtsen & Jensen 2009,

Chowdhury 2012, Kim et al 2012, Schwedt et al 2010). Several studies have shown that TTH was the most costly and decreased work effectivity. The disability is higher in patients with psychiatric comorbidities (Chowdhury 2012, Heckman & Holroyd 2006).

Pain is an inherently subjective experience, and the patients's expression of this experience (be it behavioral or verbal) can be influenced by multiple factors (e.g., gender differences, socially acceptable pain thresholds, culturally acceptable levels of "complaining", a sense of hopelessness, diminished morale, coping and adaptation abilities, and the meaning attached to the experienced pain) (Dahl 2011, Powell et al 2010). The relationship between pain and personality has long been recognized. Since the beginning of the 20th century, there has been increased attention pain to the quantitative and qualitative descriptions of personality differences in pain. With the introduction of psychological assessment techniques, effort was applied to quantify personality differences between individuals with functional (psychological) pain and those with organic (physiological) pain, and to discern which individuals are most likely to benefit from a given treatment (Weisberg 2000). Several studies have examined personality and TTH (Heckman & Holroyd 2006).

Although TTH previously was considered primarily psychogenic, a neurobiologic basis has been demonstrated. Headaches generally are reported to occur in relation to emotional conflict and psychosocial stress, but the cause and effect relationship is not clear (Bendtsen & Jensen 2009). Reasons for examining personality in persons with headache disorders include determining if personality characteristics predispose one to develop headache disorders, if personality disturbance is a consequence of the headache disorder, or if an underlying (or comorbid) causal mechanism exists that producing both conditions concurrently (Heckman & Holroyd 2006). Minnesota Multiphasic Personality Inventory-2 (MMPI-2) is a psychometric measuring devices, which have been widely used around the world for broad band assesment of personality and psycopathology. Indeed, the MMPI-2 was used in attempts to prospectively identify emotional factors that produced a vulnerability to disease and illness (Drayton 2009, Russell et al 2009). The purpose of this study was to determine the difference in pain intensity focusing on personality types in patients with TTH. We also investigated pain intensity in patients with TTH. Hopefully this study can be used as a basis for giving holistic treatment in patients with TTH.

## MATERIALS AND METHODS

This was a cross-sectional analytic study using consecutive sampling method that has been applied. Sixty seven consecutive patients were enrolled in this study but seven patients drop out (because the results of MMPI-2 were not valid). Respondents who suffer from TTH were recruited from Neurologic outpatient clinic of Dr. Soetomo hospital, Surabaya since September 2012-February 2013 that met inclusion and exclusion criteria. Pain intensity was measured using Visual Analog Scale (VAS), while MMPI-2 was used to determine the personality traits according to the participants in Psychiatric outpatient clinic. Data was displayed descriptively and SPSS 17 was used to analyze the data. Sixty subjects were analyzed using linear regression statistical methods to determine differences in pain intensity focusing on personality type.

## RESULTS

Sixty subjects that were analyzed consist of 41 female (68.3%) and 19 male (31.7%). The mean age of study subjects was 36.35, the youngest study subjects was 18 years, while the oldest was 58 years. There is 1 subject (1.7%) with infrequent episodic TTH, 22 subjects (36.7%) with frequent episodic TTH, and 37 subjects (61.7%) with chronic TTH. The mean VAS of subjects was  $5.608 \pm 1.8765$  with range from 1.4-9.8. After linear regression statistical methods, p values obtained for VAS differences focusing on personality type in TTH which can be seen in Table 1.

## DISCUSSION

Sixty subjects were analyzed in this study, consist of 41 female (68.3%) and 19 male (31.7%). This is consistent with previous study which shown that female were more affected than male patients (Bendtsen & Jensen 2009, Chowdhury 2012, Fillingim et al 2009). The mean age of TTH in this study was 36.35 years old, the youngest was 18 years, while the oldest was 58 years. This was consistent with previous study which shown that the average age of patients with TTH was 25-30 years and the peak prevalence occurs between ages 30 to 39 and decreases slightly with age (Chowdhury 2012, Fillingim et al 2009, Merikangas et al 2009, Stovner et al 2007).

Table 1. Characteristics of personality type in TTH subjects

Variable	Subjects (60)				
	Mean	Standard deviation	Minimum	Maximum	P
RC1t (Somatization) = Hypochondriasis	75.4667	9.45008	51.00	99.00	0.028
RC2t (Low positive emotion) = Depression	52.4667	8.95652	34.00	76.00	0.835
RC3t (Cynicism) = Hysteria	59.0167	10.56456	41.00	83.00	0.591

In this study we found the highest prevalence was chronic TTH (61,7%), followed by frequent episodic TTH (36,7%). Only 1 subject (1,7%) with infrequent episodic TTH. Meanwhile, from the previous studies shown that the highest prevalence of TTH was infrequent episodic TTH without specific treatment compared to frequent episodic TTH (27-30%) and chronic (2-3%) (Bendtsen & Jensen 2009, Chowdhury 2012, Jensen & Stovner 2008). In addition, this study involve the new and follow up TTH patients, so data that were obtained was prevalence, and not incidence data. This study was not a population-based with large sample size and multicenter, so there were differences in the incidence of TTH (episodic or chronic). The mean VAS values obtained in this study was  $5.608 \pm 1.8765$ . This is consistent with the diagnostic criteria of TTH from PERDOSSI (mild to moderate intensity) (Bendtsen & Jensen 2009, Chowdhury 2012, PERDOSSI 2010). A population-based study conducted in the U.S., Europe and Asia, found that light intensity in TTH patients compared to patients with migraine (Stovner et al 2007).

In this study, the mean value of the various personality types measured by RC on MMPI-2 test. The mean value of RC1 (somatization) = hypochondriasis was the highest, followed by RC3 (cynicism) = hysteria and RC2 (low positive emotion) = depression (Merikangas et al 2009). Linear regression analyses against VAS focusing on various personality types shown that p values on RC1 (somatization) = hypochondriasis was statistically significant,  $p = 0.028$  ( $p < 0.05$ ). While on RC2 (low positive emotion) = depression ( $p = 0.835$ ) and RC3 (cynicism) = hysteria ( $p = 0.591$ ), both were not significant to VAS. Study by Applegate et al (2005) shown that hypochondriasis associated with pain. High scores on RC1 showed that somatic complaints have a psychological component (Graham 1993). These points consist of complaints regarding physical function in variety of areas, including (a) gastrointestinal complaints; (b) headache and dizziness; (c) muscle weakness, and (d) pain in varying places. Hypochondriasis include multiple somatic complaints, often associated with chronic pain, nightmares, fatigue

and isolation (Megargee 2006). The presence of pain preoccupation, besides the pain itself is the core criteria of somatization, accompanied by the absence of other clinical findings that can adequately explain the pain (Clark & Chodynicky 2005). Preoccupation regarding the presence of serious disease conditions based on an offense to interpret symptoms, although the clinical examination and investigation did not find any basis for the complaint that led to distress and dysfunction in patients. Complaints continued even though variety of tests have shown no underlying physical causes (Andri 2011).

A recent study shown that the neurotic triad (hypochondriasis, depression and hysteria) associated with chronic pain and hypochondriasis is the most influential on changing episodic to chronic headache (Rausa et al 2013). The limitation of this study was not population-based, so it requires study with a larger sample size and longer time to be able to compare personality type and pain intensity. MMPI-2 is the most widely used objective measure of personality, it provides valid and reliable estimates of response bias, but in this study is not problem-based and stressor-based MMPI-2 so the results are not as what are initially expected.

## CONCLUSION

VAS score had significances with hypochondriasis personality in patients with TTH. Suggestion, population-based studies need to being conducted with a larger sample size and it is necessary to perform problem-based and stressor based MMPI-2 on pain intensity.

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