Prevalence of headache and impact on anxiety in adults

Angela Febriannie*, Renobulan Sanusi*, Reny Fahdiyani*
and Riani Dwianasari*

ABSTRACT

*Medical Profession Study
Program, Medical Faculty,
Trisakti University

Correspondence
Angela Febriannie, S.Ked
JL. Pramuka No. 1010, Rubai
Pakanbaru, Riau
Phone: 081159617

Headache is an extremely common symptom that may have profound impact on peoples' functioning and quality of life. The two most common primary headache disorders, migraine and tension-type headache, have an annual prevalence of respectively 11% and 40% in adults. The objective of this study was to estimate the prevalences of headache and anxiety in primary care patients and the impact of headache on anxiety in these patients. A cross-sectional study was conducted on 140 adult patients attending a primary health center. Outcome measures included headache impact test scores and Zung-self rating anxiety scale. The mean age of the respondents was 34.6 ± 5.2 years (range 22 - 44 years). Sixty one respondents (43.6%) in the preceding month had suffered from headaches that affected their lives, and 91 respondents (65.0%) had anxiety symptoms and a raw anxiety score of more than 40. There was a significant association between headaches affecting the lives of the respondents and the anxiety resulting from the headache (p=.0001). Among 16 respondents with attacks of headaches that severely affected their lives, 87.5% were disturbed by anxiety. In conclusion, there was a relatively high proportion of patients in the primary care setting experiencing headaches that potentially affected their lives and had an impact on their anxiety. It may be appropriate to encourage patients to inform their health-care providers about their headaches and to encourage providers to identify patients with frequent headaches.

Keywords: Anxiety, headache, headache impact test, migraine, adults

INTRODUCTION

Headache is an extremely common symptom that may have a profound impact on peoples' functioning and quality of life. The two most common primary headache disorders, migraine and tension-type headache, have an annual prevalence of respectively 11% to 40% in adults.[1,2] Chronic daily headache (CDH) is a frequent disorder, with a worldwide prevalence of 3.9–4.7%.[3] It produces severe disability in a quarter of patients suffering from the condition, leading to overuse of analgesic medications in 24–

34%, with only 25–50% seeking medical assistance.[4] CDH is a public health problem, but it is necessary to know its risk factors to clarify the pathophysiology of the disorder and to guide treatment, as well as to facilitate the development of prevention strategies. Multiple risk factors have been described for CDH in different clinical or population settings.[5,6]

Previous prospective studies of specific headache types have identified a number of predictors of incidence. Lyngberg et al.[7] in their 12-year follow-up of a general population sample found the following predictors of migraine incidence: younger age, female gender, family history of migraine, existing frequent tension-type headache (>14 headache days per year) and having a high work load. Depression has also been identified as a predictor of migraine but not of other severe headaches and this relationship is bidirectional, with migraine also predicting depression.[8] Headaches have been cross-sectionally found to be associated with anxiety, depression, and musculoskeletal pain.[9,10]

Headache is a symptom of various neurological and psychiatric disorders. The age range of 18-25 years is at 37.1% the most frequently subject to headaches, compared with the age range of 45-65 years at 27.8%.[11] Only recently has attention been paid to the functional impact of migraine and headache, and it has been slow to be applied in clinical settings. The first questionnaire developed to document this impact was the headache impact questionnaire (HimQ).[12] Migraine disability assessment (MIDAS) was derived from HimQ, which was not very user friendly for routine application.[13] The Headache impact test (HIT)-6 was developed after MIDAS. The main objective of both instruments is to identify and stratify patients requiring special attention in terms of treatment. The headache recall period is 4 weeks in HIT-6 versus 3 months in MIDAS and does not include days of absence or disability, but rather a semi-quantitative assessment of disability. HIT-6 is routinely used on websites.[14]

A study on headache identification in patients at risk for anxiety disorders conducted in Pittsburgh also used subjects in their productive years, with mean age of 40.4 ± 5.6 years and an age range of 27-53 years.[15] Several studies have reported the prevalence of anxiety and depression in patients with chronic headache. The functional impact of chronic headache was estimated as severe by 74% of patients, and 75.7% suffered from anxiety.[16] The objective of the present study was to estimate the prevalence of headache and anxiety in a primary care setting. A secondary objective was to assess the impact of headache on anxiety in adults by means of the headache impact test (HIT).

METHODS

Research design

An observational cross-sectional study was conducted at the Public Health Center, Tebet subdistrict, South Jakarta, from 14 December 2009 to 5 February 2010.

Study subjects

The subjects of the study were recruited among patients attending the Tebet subdistrict Public Health Center in South Jakarta based on the following inclusion criteria: age 20 - 50 years, having suffered from headaches in the preceding month, and willing to participate. The age range 20 to 50 years was chosen because this period constitutes the productive years. The sample was chosen by means of non-probability sampling, specifically consecutive sampling, of all patients at the Public Health Center in the Tebet subdistrict of South Jakarta.

Data collecting

Data on patients' age, gender, level of education and occupation were collected using questionnaires.

Measurements

The headaches attacking the patients during the preceding month were assessed by means of the HIT-6 instrument, which is designed "to measure the impact of headaches on a person's ability to function on the job, at school, at home, and in social situations." In this test, numerical values for each response are added to produce summary scores ranging from 36 to 78, with scores of 49 points or fewer being described as "Your headaches seem to be having little or no impact on your life". Scores of 50-55 were evaluated as "Your headaches seem to be having some impact on your life", suggesting that the headaches should not make the subjects "miss time from family, work, school, or social activities". In contrast, scores of 56-59 mean that "Your headaches are having a substantial impact on your life", carrying the risk of the subject "experiencing severe pain and other symptoms, causing her/him to "miss some time from family, work, school, or social activities". A score of 60 or more points is explained as "Your headaches are having a very severe impact on your life", with the additional advice to the patient not to allow the disabling pain and other symptoms interfere in the enjoyment of life (family, work, school or social activities).[17] The HIT-6 was found to be reliable and valid among a heterogeneous population of those with headache, and had good internal consistency and reliability among patients from a headache-specialty clinic.[18-20] Anxiety was assessed using the Zung self-rating anxiety scale.[21] With each self-rating scale, there were 20 questions being completed by the researcher during the interview. Each question was assigned a maximum score of 4, and the minimum and maximum responses for each patient were 20 and 80, respectively. The higher the score, the greater the symptoms associated with anxiety. The diagnosis of anxiety symptoms was made if the raw score was more than 40.

Data analysis

The chi square test was used to analyze the difference in prevalence of headache and anxiety, where $p < 0.05$ was considered to be statistically significant.

RESULTS

Mean age of the 140 subjects was 34.6 ± 5.2 years, with an age range of 22 to 44 years. There were 54 (38.6%) males and 86 (61.4%) females in the study sample. A total of 65 subjects (46.4%) had been educated at an *SMU* (senior high school) or equivalent. Ninety-one respondents (65%) were employed. The average raw anxiety score of these patients was 32.1 ± 6.8. Anxiety symptoms were present in 91 patients (65.0%) who had a raw anxiety score of more than 40.

As shown in Table 1, in 79 (56.4%) of the respondents, the headaches were in the category of "no or little impact on life" and 61 (43.6%) of respondents had headaches which had "impact on life", from mild to severe. Of these 61 patients, there were 28 (44.2%) who needed physician-based interventions.

The results of the chi square test showed that there was a significant association between headaches that impacted on the lives of the patients and their anxiety. Of the sixteen respondents with headaches that had a very severe impact on their lives, 87.5% suffered from anxiety. (Table 2)

Table 1. Distribution of headache categories of respondents

Headache category	N (%)
No or little impact on life	79 (56.4)
Some impact on life	33 (23.6)
Substantial impact on life	12 (8.6)
Very severe impact on life	16 (11.4)

Table 2. Relationship between headaches and anxiety in respondents

Headache*	Anxiety		p=0.008
	Yes (n= 91)	No (n=49)	
No or little impact on life	42 (53.2%)	37 (46.8%)	
Some impact on life	25 (75.8%)	8 (24.2%)	
Substantial impact on life	10 (83.3%)	2 (16.7%)	
Very severe impact on life	14 (87.5%)	2 (12.5%)	

*Chi-square test

Table 3 indicates that there was no relationship between the type of headache and the anxiety (p=0.9172) experienced by the respondents. The type of headache most frequently experienced by the respondents was migraine headache at 42.6% (26/61). Among the respondents with anxiety, a total of 23.1% (21/91) had migraine headache.

DISCUSSION

Our findings demonstrate that headache is a common symptom among patients seen at primary health centers, with 43.6% of the respondents in our study in the preceding month having experienced headaches impacting on their lives. However, these headaches were not further analyzed for associations with chronic daily headache (CHD). Different results were found in the study at the University of North Carolina (UNC) Family Medicine Center (FMC), where 58% of the respondents reported having had headaches in the preceding month[22] and 9% of these reported a frequency of headaches consistent with chronic daily headache (CDH). Our study also indicated that 42.6%

respondents had headaches of the migraine type. Our study results differed from those of a study on subjects with mean age of 40.4 ± 13.0 years, where 21% of the respondents had migraine headaches.[15] Regarding the association of headaches with anxiety, our study results demonstrated that 23.1% of respondents with anxiety also suffered from migraine headache. Similar results were obtained in an Italian study showing that anxiety was reported by 18.4% of patients with migraine, 19.3% of patients with tension-type headache, and 18.4% of patients with combined migraine and tension-type headaches.[23] The exact nature of the relationship between migraine and anxiety remains unclear. Although chronic headaches induce anxiety, it is likely that anxiety develops not only as a consequence of recurrent headache, but also of other disorders.

The headache disorders are a group of heterogeneous conditions that result in a spectrum of disability within and among different individuals.[2] Our findings suggest that headache disorders are relatively under-diagnosed in the primary care setting, but this is not entirely due to healthcare providers'

Table 3. Distribution of anxiety by type of headache in respondents

Type of headache*	Anxiety		p=0.9172
	Yes (n= 49)	No (n=12)	
Tension Headache	17 (80.9%)	4 (19.1%)	
Cluster headache	11 (78.6%)	3 (21.4%)	
Migraine headache	21 (80.7%)	5 (19.3%)	

*Chi-square test

possible inattention to headache conditions. Rather, it appears that a substantial proportion of patients believe that their healthcare providers do not know that they experience headaches. Possible explanations for this include patients' perception that their headaches or headache-related disabilities are not sufficiently important or debilitating to warrant discussion with their providers. A limitation of the present study is that our subjects were patients attending a public health center, who cannot be said to represent the whole population of the community. Another limitation is the cross-sectional design used in our study, which cannot establish cause-effect relationships between headaches and anxiety, due to lack of temporal factors between both variables. It is therefore recommended to conduct further research studies using a prospective cohort study that is capable of determining cause-effect relationships between headaches and anxiety.

CONCLUSIONS

A relatively high proportion of patients in the primary care setting experienced attacks of headaches that had an impact on anxiety. Anxiety was also experienced by the majority of respondents, around one quarter of whom had migraine headaches.

ACKNOWLEDGEMENTS

REFERENCES

1. Breslau N, Rasmussen BK. The impact of migraine: epidemiology, risk factors, and co-morbidities. Neurology 2001;56: S4–12.

2. Bjorner JB, Kosinski M, Ware JE Jr. Calibration of an item pool for assessing the burden of headaches: an application of item response theory to the headache impact test (HIT). Qual Life Res 2003;12:913–33.

3. Wang SJ, Fuh JL, Lu SR, Liu CY, Jsu LC, Wang PN, et al. Chronic daily headache in Chinese elderly. Neurology 2000;54:314–9.

4. Lu SR, Fuh JL, Chen WT, Juang KD, Wang SJ. Chronic daily headache in Taipei, Taiwan: prevalence, follow-up and outcome predictors. Cephalalgia 2001;21:980–6.

5. Stewart WF, Scher AI, Lipton RB. Stressful life events and risk of chronic daily headache: results from the frequent headache epidemiology study. Cephalalgia 2001;21:279-82.

6. Boardman HF, Thomas E, Millson DS, Croft PR. Psychological, sleep, lifestyle, and comorbid associations with headache. Headache 2005;45:657–69.

7. Lyngberg AC, Rasmussen BK, Jørgensen T, Jensen R. Incidence of primary headache: a Danish epidemiologic follow-up study. Am J Epidemiol 2005;161:1066–73.

8. Breslau N, Schultz LR, Stewart WF, Lipton RB, Lucia VC, Welch KMA. Headache and major depression: is the association specific to migraine? Neurology 2000;54:308–13.

9. Zwart JA, Dyb G, Hagen K, Odegard KJ, Dahl AA, Bovim G, et al. Depression and anxiety disorders associated with headache frequency. The Nord-Trøndelag Health Study. Eur J Neurol 2003;10:147–52.

10. Hagen K, Einarsen C, Zwart JA, Svebak S, Bovim G. The co-occurrence of headache and musculoskeletal symptoms amongst 51050 adults in Norway. Eur J Neurol 2002;9:527–33.

11. Rueda-Sánchez M, Díaz-Martínez LA. Prevalence and associated factors for episodic and chronic daily headache in the Colombian population. Cephalalgia 2008;28:216–25.

12. Stewart WF, Lipton RB, Simon D, Von Korff Liberman J. Reliability of an illness severity measure for headache in population sample of migraine sufferers. Cephalalgia 1998;18:44–51 .

13. Stewart WF, Lipton RB, Kolodner K, Liberman J, Sawyer J. Reliability of the migraine disability assessment score in population-based sample of headache sufferers. Cephalalgia 1999;19:107–14.

14. Magnoux E, Freeman MA, Zlotnik G. MIDAS and HIT-6 French translation: reliability and correlation between tests. Cephalalgia 2007;28:26–34.

15. Marcus DA. Identification of patients with headache at risk of psychological distress. Headache 2000;40:373-6.

16. Donnet A, Lanteri-Minet M, Guegan-Massardier E, Mick G, Fabre N, Géraud G, et al. Chronic cluster headache: a French clinical descriptive study. J Neurol Neurosurg Psychiatry 2007;78: 1354-8.
17. Bayliss MS, Batenhorst AS. The HIT-6: a user's guide. Lincoln, RI: Quality Metric, Inc; 2002.
18. Kosinski M, Bayliss MS, Bjorner JB, Ware JE, Garber WH, Batenhorst A, et al. A six-item short-form survey for measuring headache impact: the HIT-6. Qual Life Res 2003;12:963-74.
19. Ware JE, Kosinski M, Bjorner JB, Bayliss MS, Batenhorst A, Dahlof C, et al. Applications of computerized adaptive testing (CAT) to the assessment of headache impact. Qual Life Res 2003;12:935-52.
20. Kawata AK, Coeytaux RR, DeVellis RF, Finkel AG, Mann JD, Kahn K. Psychometric properties of the HIT-6 among patients in a headache-specialty practice. Headache 2005;45:638-43.
21. Zung WWK. A rating instrument for anxiety disorders. Psychosomatics 1971;12:371-9.
22. Coeytaux RR, Linville JC. Chronic daily headache in a primary care population: prevalence and headache impact test scores. Headache 2007; 47:7-12.
23. Beghi E, Allais G, Cortelli P, D'amico D, De Simone R, d'Onofrio F, et al. Headache and anxiety-depressive disorder comorbidity: the HADAS study. Neurol Sci 2007;28:S217–9.