Original Article

A COMPARISON OF HEADACHE AND NON-HEADACHE SUFFERERS ON MEASURES OF SOCIAL SUPPORT AND MENTAL HEALTH PROBLEMS

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ABSTRACT

138 headaches sufferers and 138 subjects without headaches were studied to investigate if there were differences between headache and non-headache sufferers in terms of their mental health and social support levels. The overall results of this study indicated that headache sufferers, as compared with non-headache sufferers had slightly more mental health problems, and more social support from their family members. When the results were scrutinised in more detail, it was observed that headache sufferers reported that they felt less capable of making decisions about things, were not always able to face up to their problems, and sometimes thought about themselves as a worthless. Given that the study was based on a community, rather than clinic sample, further research would be required to examine the differing the types of headaches that people are suffering from, and the intensity of the headaches, in relation to mental health problems.

Key words: Headache, mental health, social support

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INTRODUCTION

Headaches are a commonly reported problem in today's society. When people experience headaches, there is a tendency for them to feel upset and irritable, especially when the pain becomes unbearable. Given this scenario, there may be a possibility that headache sufferers, as compared with non-headache sufferers, may generally be experiencing poorer mental health, due to the pain they are experiencing. In addition to this, having a headache often elicits sympathy in others, thus prompting more support from those around. Therefore, there may also be a possibility that headache sufferers, do not just have poorer mental health, but may also be the recipients of more social support, as compared with non-headache sufferers. This study has been set up to investigate the relationship between headaches, mental health and social support. The literature review that follows first defines headaches, mental health and social support. Following this, it provides some evidence about research that investigates the differences in mental health and social support amongst headache and non-headache sufferers. The literature review then concludes with several hypotheses on what the researchers expect to find from the study.

A headache is often described by sufferers and having persistent sensations of head pain which are caused by a band being tightened around the head. This pain usually occurs in the front or on both sides of the head. The pain develops gradually and may last for hours, weeks, or even months.

Headache may be the most commonly reported bodily complaints. Frequent tension-type headaches are now thought to be maintained primarily by a central nervous system (CNS) dysfunction, not solely by input from peripheral nerves in contracted facial, neck, and shoulder muscles.[1] Surveys indicate that between 50% and 70% of adults experience headaches, 40% of which are tension headaches.[2] The Headache Classification Sub-Committee of the International Headache Society divided headaches into several major categories.[3] The most common types of headaches are vascular headaches of the migraine type, muscle-contraction headaches, and combined headaches. These different headaches are described as follows:

Vascular headaches of the migraine type vary widely in intensity, frequency and duration. The attacks are commonly unilateral in onset, are usually associated with anorexia and sometimes with nausea and vomiting. In some cases, these headaches are associated with, conspicuous sensory, motor, and mood disturbances. However, this does not cause permanent changes in the cranial arteries.[4] Muscle-concentration headache, also known as "tension headaches", are experienced as sensations of tightness, pressure, or constriction. It is associated with sustained contraction of

skeletal muscles which are not caused by permanent structural change. Usually, the tension headache appears to be the individual's reaction during life stress.[4] A combined headache refers to combinations of both vascular headache of the migraine type and muscle-contraction headache. These two headaches may occur in one episode.[4]

There is some evidence that headaches may be caused by poor mental health, and vice-versa. In a study of 500 migrainous patients, they found that 13% had anxiety symptoms, and one third had depression at times other than their migraine attack. In another study, Price and Blackwell[5] administered an anxiety scale to 31 migraineurs and 26 non-headache sufferers as controls and found significantly higher scores in the former group. Results indicated that the migraineurs showed greater anxiety and these support the results provided for earlier reports that migraineurs are more anxious than non-headache controls.[6] Many researchers using other mental health instruments also noted higher levels of anxiety amongst headache sufferers.[7]

It has also been suggested that mental health problems such as anxiety and depression can precipitate or aggravate headaches. Headache sufferers are often described as obsessive, perfectionist, anxious, and unable to express emotion.[6]

A variety of studies also suggest that there is a link between headaches and social support. Martin and Soon[8] reported differences between headache and control groups in terms of availability and adequacy of attachment of social integration using the Multidimentional Scale of Perceived Social Support. The headache groups reported less social support compared with the control group. Martin and Soon [8] also found that headache sufferers were significantly less satisfied with the support available to them and scored lower on all four types of functional support measured in the study: appraisal support, esteem support, belonging support, and tangible support.

The literature review so far has indicated that headache sufferers, as compared with non-headache sufferers, tend to experience higher levels of anxiety and depression. In addition, they also tend to have higher support from their families. Many of these populations have been clinical populations. However, would populations, experiencing headaches taken from a non-clinical community sample have the same results? Thus, the purpose of this study is to investigate the differences of mental health and social support among the headache sufferers and non-headache sufferers amongst a non-clinical community sample. The specific research questions of the study were:
1. To identify any differences in mental health among people with headache and no headache.
2. To identify any differences in social support among people with headache and no headache.

METHOD

Subjects
The subjects of this study consisted of 138 subjects with headaches and 138 subjects without headaches. The data was collected within an urban college, university and working community in Selangor and Kuala Lumpur, Malaysia, over a period of 10 weeks, between April–June 2007. Inquiries were made of people within the community as to whether they had headaches, and subsequently whether they were willing to take part in the study. Criteria for inclusion within the headache group was to have experienced a headache twice a month. Initially, the data for only the headache sufferers was collected. Subsequently, the data for the non-headache sufferers was collected based on the demographic profile of the headache sufferers. No distinction was made as to whether the headaches suffered were migraines or tension headaches. Those who had only one headache per month were not eligible for inclusion within the headache group. Given the unpredictability sourcing persons with headaches within a community sample, the overall sample was not controlled for age, gender, race or educational qualification. However, each headache sufferer was matched for race and age group with a non-headache sufferer.

Statistical tests
To answer the two hypotheses of this study, two t-tests were used to calculate the results. The headache status (i.e., headache vs no-headache) formed the independent variable, whereas both mental health status (i.e., General Health Questionnaire) and social support (i.e., Multidimensional Scale of Perceived Social Support) formed the dependent variables.

Mean differences on respondent mental health and social support variables were assessed via Hotelling's T^2. The main reason for the choice of this test, as opposed to an Analysis of Variance (ANOVA) is that the Hotelling's T^2 test is calibrated for analysis involving two equal groups of continuous data, as opposed to the ANOVA which considers three groups or more of continuous data.

To further understand the specific differences in mental health problems that headache and non-headache subjects were experiencing, an item analysis of each of the 12 questions in the mental health measure was carried out. To do this, a Hotelling's T^2 was carried out (see Table 4). Higher scores are indicative of more mental health problems. An item-by-item analysis of the mental health results indicates a similar picture to the overall mental health scale result.

Measurement instruments
The General Health Questionnaire [GHQ][9] was designed as a screening device to detect psychiatric disorder in an adult population. The device encompasses questions on somatic

symptoms, anxiety and insomnia, social dysfunction, and depression. It is a self-administered 12 item scale where respondents rate themselves on a four point scale (i.e., Better than usual, Same as usual, Worse than usual and Much worse than usual). Higher scores are indicative of greater symptomatology. A high degree of internal consistency was observed for each of the 12 items with Cronbach's alpha value of 0.37-0.79. Test-retest coefficients for the 12 items were highly significant [9]. Whilst the author is aware that there are a number of Malaysian studies that have employed various versions of the GHQ in research. However the GHQ-12 has not been specifically validated with Malaysian populations.

Multidimensional Scale of Perceived Social Support [MSPSS][10] is a 12 item self-administered scale that measures perceived social support from three sources: friends, family and a significant other. The item responses are of a 7-point categorical scale, where respondents answer whether they agree to whether they do not agree with the statement. Higher scores are indicative of higher perceived social support. Internal consistency for the MSPSS was found to be .91 for the total scale, and .90 to .95 for the subscales. The norms described are those of North American populations. To date, there are no reliability data for the MSPSS in Malaysian populations.

Procedure
The questionnaires were administered by a team of 12 trainee psychologists. The questionnaires were given to participants to complete, either on-the-spot, or to take home. Each participant was also required to complete a consent form. All questions were administered in English.

RESULTS

71.4% of the respondents were students and 28.6% were working adults. The age of the subjects ranged from between 14 to 63 years. The mean age of the total sample was 24.6 years, indicating that the age distribution was somewhat skewed towards younger, rather than older adults. The age

range of students who consisted of 71% of the sample, was 14–24 years old. The age range of the working adults was 15-62 years old. In any case, the study did not control for age group. Racially, the sample consisted of 9 (3.3%) Malays, 181 (65.6%) Chinese, 61 (22.1%) Indian, and 25 (9.1%) other races. Education-wise, there were 48 (17.4%) with SPM qualifications, 50 (18.1%) 6th form qualifications, 34 (12.3%) diploma qualifications, 127 (46%) undergraduate degree qualifications, 15 (5.4%) master degree qualifications, and 2 (0.7%) and doctoral degree qualifications.

The mean of GHQ-12 scores for headache sufferers were 24.91 (SD = 6.46), with a range of 37.0 (Maximum = 45.0, Minimum = 8.0). Whereas the mean of GHQ-12 scores for non-headache sufferers were 23.37 (SD = 5.20) with a range of 31.0 (Maximum = 45.0, Minimum = 14.0). This revealed an overall significant effect for headache status. Persons with headaches generally had slightly more mental health problems [$t(274) = -2.176$, $p < .05$] and higher levels of social support from families [$t(274) = -4.023$, $p < .01$], as compared with persons with no headaches. There was no significant difference across groups for measure of social support from friends and significant others (see Table 2).

Table 1. Socio-demographic characteristics of respondents

Characteristics	Headache, n (%)	No headache, n (%)
Age groups (years)		
<20	46 (33.3)	48 (34.8)
21-30	72 (56.2)	72 (56.2)
31-40	10 (7.2)	7 (5.1)
41-50	5 (3.6)	5 (3.6)
>50	5 (3.6)	6 (4.3)
Ethnic groups		
Malay	5 (3.6)	4 (2.9)
Chinese	91 (65.9)	90 (65.2)
Indian	31 (22.5)	30 (21.7)
Others	11 (8.0)	14 (10.1)
Total	138	138

Table 2. Comparison of mental health and social support by headache status

Characteristics	Headache, mean (SD)	No headache, mean (SD)
Mental Health	23.37 (5.20)	24.91 (6.46)*
Social Support – Family	1.81 (0.41)	2.06 (0.61)*
Social Support – Friend	2.05 (0.49)	2.11 (0.56)
Social Support – Significant others	2.06 (0.58)	2.12 (0.60)

* $p < 0.01$

In this case, it would appear that subjects with headaches, as compared with subjects without headaches, reported that they

feel incapable of making decisions about things [$t(274) = -2.311$, $p < .01$], they were not able to face up to their problems

[t (274) = 0.426, p < .01], and think about themselves as a worthless people [t (274) = 0.221, p < .01].

To find out the significant differences in social support among headache and non-headache subjects, Hotelling's T^2 was also carried out (see Table 3). Higher scores are indicative of better social support. In this case, it appeared that headache sufferers received more social support from family as compared with non-headache sufferers [t (274) = -3.762, p < .01]. However, there were no significant differences for social support from friends [t (274) = -.740, p > .01], and significant others [t (274) = -.690, p > .01].

Table 3. Mental health question items by headache status

Item	Mental Health Question	No Headache	Headache	T value
c1.	Not been able to concentrate on whatever you're doing?	2.04	2.13	-1.06
c2.	Lost much sleep over worry?	2.14	2.11	0.27
c3.	Felt that you are not playing a useful part in things?	1.97	2.07	-1.25
c4.	Felt in capable of making decisions about things.	1.83	2.03	-2.31*
c5.	Felt constantly under strain?	2.31	2.27	0.43
c6.	Felt you couldn't overcome your difficulties?	2.04	2.16	-1.10
c7.	Not been able to enjoy your normal day-to-day activities?	1.96	2.10	-1.73
c8.	Not been able to face up to your problems?	1.94	2.28	-4.0**
c9.	Been feeling unhappy and depressed?	2.01	1.99	0.22
c10.	Been losing confidence in yourself?	1.80	1.99	-1.79
c11.	Been thinking about yourself as a worthless person?	1.55	1.88	-3.31**
c12.	Not been feeling reasonably happy, all things considered?	1.95	2.02	-0.93

* p <0.05
** p <0.01

DISCUSSION

This study was set up to find out if there were differences between a community sample of headache and non-headache sufferers in terms of their mental health and social support levels. The results of this study indicated that headache sufferers, as compared with non-headache sufferers, generally had slightly more mental health problems, and more social support from their family members.

The finding that headache sufferers have slightly more mental health problems, as compared with non headache sufferers, has a similar trend when compared with other studies. However differences in intensity of the mental health problems are minimal. This may be because a community, rather than a clinical sample was studied and the level with which subjects would have been able to cope with their headaches would perhaps be higher than in a clinic sample. Given this situation, the community sample of headache sufferers may perhaps be less anxious and agitated about their headache pain, as compared with those from a clinic sample.

It was observed that headache sufferers tended to have higher levels of social support from their family members, as compared with non-headache sufferers. This finding is similar to that of other studies which generally have observed higher social support levels amongst headache sufferers.[11] When a person has a headache, there is a natural tendency for others to want to assist them. Given that 71.4% of subjects in this study fall within the age range of students, it would be normal that many are still living with their families. Thus, when they get ill, their family members, usually their parents, would provide care and assistance to them.

When an item-by-item analysis on mental health questions was carried out, it appeared that subjects with headaches, as compared with subjects without headaches, report significantly more problems on some specific mental health items. The subjects with headaches felt more incapable of making decisions about things, were not able to face up to their problems, and thought about themselves as a worthless people. All these three symptoms are problems of negative thoughts and coping suggesting some degree of depressive symptomatology, according to the DSM IV.[12] This would thus lead us to suggest that when it comes down to specifics issues, subjects with headaches may report greater depressive symptoms, as compared with subjects without headaches. In this context, the results are more similar to results of previous studies.[7] Given this situation, future studies may need to use a more specific mental health tool which measures depression, rather than a general mental health.

There are a variety of factors which may contribute towards the limitations of this study. Firstly, no information was collected of how severe the headaches were. However, the intensity of pain of headaches is a subjective matter that varies from

person to person. In this study, the main information that we have is that the person suffers from headaches once every fortnight or twice monthly.

A second limitation of this study concerns not knowing anything about associated medical conditions of the subjects, and also sampling them from one main age group. In this study, these questions have not been asked, and the sample does not control for these demographics. This may be an important consideration given that older people tend to be more susceptible to more chronic aches and pains, thus affecting their mental health levels. Future studies might want to group the sample into different age groups, and also include questions that enquire about the existence of other medical conditions.

Despite the limitations of this study, there are some useful insights that may be derived from this study. The mental health of headache sufferers may not differ much from non-headache sufferers. However, given their pain, they sometimes develop negative impressions of their ability to carry out their daily tasks. These are emotional behaviours that medical professionals who are treating headache sufferers need to be aware of, and be emphatic towards. Thus, we would need to be aware of specific mental health problems amongst headache sufferers.

In this study, it was observed that headache sufferers, as compared with non-headache sufferers, have slightly more general mental health problems, and higher levels of some specific problems indicative of depressive symptoms. The headache subjects, as compared with non-headache subjects also had higher levels of social support from their family members. The results need to be taken with some caution given that the sample used is a community, rather than a chronic sample, and does not control for differing age groups, or specify the type of headaches. To conclude, further research would be required that examines the types of headaches that people are suffering from, the intensity of the headaches, and specific mental health as compared with general mental health issues.

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How to diagnose migraine in primary care?

Ebell MH. Diagnosis of migraine headache. *Am Fam Physician.* 2006;74(12):2087-8.
http://www.aafp.org/afp/20061215/poc.html

If the headache patient has 4-5 features (see right), the chance he/she has migraine is 92%. But if he/she has only 0-2 features, then his/her chance is only 17%.(Assuming migraine prevalence is 33%)	ν Pulsatile quality of headache ν Headache duration of 4-72 hours ν Unilateral headache ν Nausea or vomiting ν Disabling intensity of headache