Reviewer's report

Title: Combination of anxiety and depression is associated with an increased headache frequency in migraineurs: a population-based study

Version: 6  Date: 15 October 2014

Reviewer: Todd Smitherman

Reviewer's report:

The authors present an interesting study examining rates of depression and anxiety among migraineurs in Korea and attempt also to assess the relation of these variables in headache characteristics. They acknowledge the limited sample size as a limitation, and I certainly agree that the small sample of migraineurs with depression alone and with both anxiety/depression limits the strength of the subgroup analyses.

Minor Essential Revisions. The authors refer to "anxiety" throughout the manuscript, but the Goldberg, a measure with which I am generally unfamiliar, seems to map closely to the diagnostic criteria for Generalized Anxiety Disorder specifically. The authors should consider qualifying their use of the term "anxiety" or at least addressing what anxiety disorders (as anxiety is not one "thing") the Goldberg is useful for screening.

The authors should better specify how participants were recruited and justify the very high refusal rate. It is striking that such a large proportion refused to complete surveys--how were individuals approached/recruited/identified for potential participation?

The authors indicate that the diagnostic criteria for migraine without aura were used--does this mean that no individuals with aura were included or that aura was simply not assessed? Were any efforts made to distinguish between episodic and chronic migraine? From the attack frequency distributions it appears as though only those of those with both depression and anxiety had attacks at a frequency suggestive of chronic migraine--the frequency analysis addresses this to some extent, but I am curious if the authors can indicate how many individuals met criteria for chronic migraine.

The authors should more clearly indicate what these data add to existing literature. They acknowledge in the Discussion that the effects of depression and anxiety on disability and quality-of-life are well-documented, and thus many of the findings replicate what is already established. Is the main contribution the analysis of migraine symptoms as a function of depression/anxiety?

On page 13, line 23, there appears to be a numerical error--"174/147" should be changed to "17/147"

Level of interest: An article whose findings are important to those with closely
related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I receive research support from Merck (non-financial).