Reviewer’s report

Title: Factors accounting for the association between anxiety and depression, and eczema: The Hordaland Health Study (HUSK)

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Reviewer: Ruth E Taylor

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Review of klokk et al Factors accounting for the association between anxiety and depression and eczema: The Hordaland Health Study (HUSK)

By Dr Ruth E Taylor

General comments:

In general I thought this was an interesting and worthwhile paper and I enjoyed reading it. However I did have some specific comments which are set out below.

I think one of the main problems which I would class as a major compulsory revision is that the authors need to clarify the concept of somatization which they are using and how they are defining somatization. The aims and objectives should then become clearer. I think they need to be clearer about the proposed links between the aetiological factors they set out to study. Most of the other comments are discretionary revisions where the paper could be improved.

1. Major compulsory revision:
   Abstract

   could be clearer:

   Background could explain why the particular factors of interest were picked.

   Methods should make it clear that whole sample was used for all factors except IgE where only existed in female subsample. How was omega 3, health anxiety and somatisation measured.

   In conclusions it sounds rather muddled to say “and the associations of interest were insignificant after this adjustment” because somatization and health anxiety were two of the associations of interest. Needs to be clearer what the primary hypothesis was and which factors were then adjusted for as possible confounders.

   Background

   2. Discretionary revision: Second paragraph: Would be interesting to comment on what the association is with parity.

   3. Minor essential revision: Sentence after this does not make sense: “As a substantial part etc “ there should be no full stop after eczema just needs a
comma and then don’t need consequently.

4. Major compulsory revision: These two sentences not very clear. 
Last sentence page 3: I don’t really understand this sentence, are the authors suggesting excema is a somatization symptom? Perhaps they are using somatization in a different sense to what I would understand. Somatised symptoms generally considered to be non organic-no underlying physical disease process. I would not put excema in this category.

I think it could be made clearer what exactly are the proposed aetiological links between depression, IgE, Omega fatty acids, health anxiety, . Somatisation and excema because even after reading the introduction I am not clear about this.

Methods

5. Minor discretionary revision: Top of page 5. There was obviously quite a lot of missing data on excema and mental health variables as the sample included is much smaller than the overall sample. The extent of this missing data could be made clearer and given in percentage terms for both mental health and excema variables.

6. Minor discretionary revision: The IgE substudy in females only will have an overrepresentation of hairdressers i.e. half the sample. May or may not be relevant.

7. Minor discretionary revision: P5 para 3: sentence beginning “The first which is identical etc” is not very clear I am not sure what this means about prepaid envelope etc how was examination and bloods done?

8. Minor discretionary revision: P11 in results. There is a comment that the gender by excema interaction may be due to multiple testing. A bonferroni correction should be applied to correct for multiple testing.

Discussion

I thought this was good and interesting. It is clearly written and acknowledges relevant methodological problems and limitations.

9. Major compulsory revision (but is same issue as in point 4 relating to the concept of somatization). In the section discussion about somatization accounting for the relationship between anxiety and depression and excema the somatization measure is basically a measure of the tendency of an individual to experience non organic symptoms. We do not know what causes this. It could be that some individuals are aware of and attend excessively to physiological body symptoms which because of health anxiety they attribute pathologically. This possibility makes the measure of somatisation and that of health anxiety very similar. Or it could be that there are anxiety/depression driven pathophysiological processes which produce bodily symptoms for example excess gastric acid producing gastric symptoms, or bowel spasms producing pain etc. This latter mechanism would more plausibly lead to a generation of excema
by some pathophysiological process. There are people who would argue that excema is not a somatization symptom. They would define somatization as experience of and help seeking for a symptom not explained by any organic disease, (but attributed by the patient to disease) in a patient who has psychological disorder. In excema there is clearly a disease process. I think the authors need to define at the outset what concept of somatization they are using and this will make their argument in the discussion clearer.

**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 declare that I have no competing interests.