Reviewer's report

Title: Folate intake and depressive symptoms in Japanese workers considering SES and job stress factors: J-HOPE study

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Reviewer: Erik Giltay

Reviewer's report:

This large cross-sectional study showed that in over 2000 Japanese workers there was an independent inverse association between depressive symptoms and the folate intake estimated through a food questionnaire. The response rate was very large, and much larger that in comparable observational studies. The number of subjects was large. The findings are of interest, but there are also several points of criticism.

Major Compulsory Revisions:
- The whole manuscript should be edited thoroughly by a native English speaker (example: “Individuals who with a K6 score more than 9 in a 24-scoring system were considered as with depressive symptom.”). Moreover the introduction and discussion do not seem to include the most important literature. For example, there have been randomized trials of folate administration in community samples and patients (e.g. “Folate for Depressive Disorders: Systematic Review and Meta-Analysis of Randomized Controlled Trials, Taylor et al, Journal of psychopharmacology 2004; Christensen et al. No clear potentiation of antidepressant medication effects by folic acid + vitamin B12 in a large community sample. J Affect Disord 2011;130:37-45). These studies provide much stronger evidence for or against folate in depression than observational data. Moreover, the hypothesis of homocysteine and cardiovascular disease is now supported by old literature only, while the more recent evidence strongly support a different role.

- It is unclear whether the food questionnaire used had been validated in relation to folate intake. If so, validation data should be presented. The references given seem to indicate that there was validity relating to sodium, potassium, niacin and macronutrient intake. If the validity has not been tested specifically for folate, than this needs to be done, perhaps using the serum samples that may still be available in this sample of Japanese workers. Several other measurements were done in blood, but folate had not been measured objectively. If in a (random or nested case-control) subset of participants folate could be measured this would substantially add to the article.

- Some data of analyses is given in de discussion only, e.g., related to associations in women and men separately. These should have been given first in de results section. The beta’s of the association seemed to be not much different between the sexes, but the samples sizes were. So I am not much
convinced by the conclusion by the authors that no association existed in women. The study may have been underpowered for such a conclusion to be drawn.

Minor Essential Revisions:
- It is unclear whether and how the drop-outs differed from the participants.
- Please indicate whether the self-administered or interviewer-administered version of de K6 was used.
- Has the Japanese version of the K6 been validated, and which method was used to translate the version in Japanese. The reference given for validation does not have a very strong design, as 61 subjects were tested by a psychiatrist but without the use of structured means (e.g., SCID, CIDI) to diagnose participants. Further, no sensitivity and specificity is given for the cut off of 9 for the K6 in the study by Baggaley et al.
- SPSS has not been developed by IBM Corporation, New York, USA.
- It is unclear whether there was also a question about the use of vitamine B preparation of folate supplements, and whether such participants were excluded.
- It is stated that the results were in agreement with previous study of Japanese [4, 26]. Yet study 4 was done in eastern Finland. Moreover it was stated that the small sample size of this study was 517 (Ref. 4), which seems to be incorrect.
- Table 1. Please also indicate whether there was a difference between the groups for total energy intake and unadjusted folate intake.
- Table 2. It seems unnecessary to give the beta coefficients for all covariates, as the focus of the manuscript was on folate intake in relation to depressive symptoms. Please also give the crude (i.e., unadjusted), and age and sex adjusted beta values.
- Table 3 does not seem to add much to the findings and analyses, besides reiterating the results from table 2, albeit with a much lower power, as a dichotomization of the dependent variable (depressive symptoms) was used.

Level of interest: An article of limited interest

Quality of written English: Not suitable for publication unless extensively edited

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.