

Reviewer's report

Title: More distinct food intake patterns among women than men in northern Sweden: a population-based survey

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Reviewer: H el ene Delisle

Reviewer's report:

Overall, this is a good paper, with its large sample size as one of its major strengths.

Food intake pattern studies are relevant for healthy eating promotion, and among data driven approaches, cluster analysis is well suited for the purpose.

However, we feel that major revision is needed. Suggested changes are described below.

1. Research question:

The authors report dietary intake patterns in a large population sample, which responds to the need for valid information on long-term average dietary intake in a population as a prerequisite for planning and evaluating dietary interventions, according to the authors. However, how they intend to use their findings for the promotion of healthy eating is not addressed, nor discussed. Is the "prudent" pattern to be advocated? How and to whom? It would be useful if not essential to provide the profile of people in the various clusters, based on age, sex, physical activity, smoking, education, etc., in order to identify the population segments at higher risk of unhealthy diet, for instance. It would also appear essential to appraise the quality of the various eating patterns, for instance, by computing their nutrient density.

2. Methods:

Methods for sample selection are not described. Other than that, the methods appear sound and are well described. For food intake measurement, the use of color photographs of plates with increasing portion sizes is interesting.

3. Results:

The sampling process might be better presented in a table. It is of concern that close to 7% of subjects were excluded because of a too low or too high FIL level, and that in the final sample, more than half were considered as under-reporters...

We suggest reporting intakes in kcal and not only in MJ.

We would suggest further data analysis, including:

- Identifying socio-demographic and lifestyle features of the various clusters, as suggested above, with related tables or figures
- Comparing the nutrient density of the various dietary patterns as a means of

verifying the quality of these patterns

- Since the sample is large, applying the cluster analysis among men and women after excluding the under-reporters, in order to check whether the results are the same as when including all subjects.

4. Discussion and conclusion:

We would have liked to see some points further discussed, beyond the well-known under-reporting by high-BMI subjects and higher consumption of fruit and vegetables by women. For instance:

- Statistical method: is the cluster analysis more relevant than other data-driven methods of studying eating patterns?

- What if intake data were not corrected for energy intake (at least among the non-under-reporters?)

- How “prudent” is the prudent dietary pattern cluster, and what are the implications for nutrition communication?

- How appropriate are the names given to the clusters? For instance, the “tea and cookies” subjects do not appear to eat more cookies...

The data were collected between 1992 and 2005: major dietary shifts may have occurred over this time span, and this is not mentioned anywhere.

The conclusion of a larger variation of intake among women than men is not too exciting... And how the data will be useful to target information on healthy diet to “those most in need” is not at all explained.

5. Title and abstract:

The title, much like the conclusion, does not mean much, and even “more distinct patterns” (in the title) does not mean the same as “larger variation” (in the conclusion).

6. Writing:

Fine.

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

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests