Reviewer’s report

Title: Omega-3 fatty acids to prevent preterm birth: Australian pregnant women’s preterm birth awareness and intentions to increase omega-3 fatty acid intake

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Reviewer: Sebastiano Lava

Reviewer's report:

Dr. de Seymour and colleagues present a survey among Australian mothers, investigating three different areas: knowledge on preterm birth, knowledge about pregnancy nutrition and nutritional supplementation, potential willingness to increase omega-3 intake during pregnancy.

The issue is interesting and of clinical relevance, with an high potential for clinical care as well as a high potential to impact a high number of children. The study design is adequate. However, information on how the instrument was developed, tested and evaluated should be provided. Was the instrument validated? Was it at least pilot tested?

The English quality is good. However, the current manuscript is too long and should be shortened by about 10-20%.

Furthermore, the Discussion uses too much space to re-summarize the results and fails to interpret some interesting and/or surprising results (these are listed below, in the "specific comments" section).

As a consequence of the identified gap, authors propose the "implementation of behavioural change interventions". However, especially considering the high adherence to the already recommended vitamins and their finding of health professionals being the main information source, I feel that simply updating the recommendations, asking health professionals to recommend (or prescribe) omega-3 rich diet (or supplementations) might likely be a sufficient and very easy first step. Stressing this very simple and straightforward consequence of your study would emphasize the usefulness and applicability of your research! (Please also see specific comments below.)

The literature is globally well done, some comments and suggestions are provided below.

Specific comments:

Line 28: please eliminate "substantial" and write "42%" instead.
Line 41: "81.9%" --&gt; "82%"
Line 45: "89.5%" --&gt; "90%"
Line 48: "... through supplementation increased."
Line 54: "Implementation of behavioural change interventions to increase": see also comments to the body of the manuscript. This is a possibility (above all if dietary intake is preferred), but, also considering the high adherence to the already recommended vitamins and your finding of health professionals being the main information source, the simple recommendation (and/or prescription) from health professionals might be a sufficient and very easy first step, without the need of developing (already as a first step) behavioural change interventions.

Line 62: delete "(birth < 37 weeks' completed gestation)"
Line 63: delete "devastating"
Line 63: delete "for the infant"
Lines 66-67: "as many preterm births are unexpected, women may miss out on effective treatments...": sorry, but I do not really understand the causal relationship between the fact that several preterm births are unexpected and the missing of prevention interventions, which, for their nature, are directed to all (and not only to the future preterm) pregnant mothers (probably, these measures are even more effective in unexpected than in expected preterm births. I mean, probably the supplementation will not be as much effective in twin pregnancies or severe IUGR or twin-twin transfusion syndrome or lupus erythematosus induced AV-block and bradycardia, ..., as in otherwise healthy pregnancies). Could you please explain a little better the causal link?

Line 103: "A cross-sectional research design was used to survey pregnant women." "A cross-sectional survey was performed among pregnant women."
Line 103: 73-items! This is a lot and appears to contradict recommendations on survey research, which recommend to prefer short, simple, "user-friendly" surveys. Obviously, a long survey might be justified in special circumstances. Please refer to such recommendations and argue your choice (references:
- Boynton PM, Greenhalgh T. Selecting, designing, and developing your questionnaire. BMJ. 2004;328(7451):1312-5.
- Boynton PM. Administering, analysing, and reporting your questionnaire. BMJ. 2004;328(7452):1372-5.).
(In any case, the impressive number of participants seems to provide some proofs that your survey was not that long that nobody was interested in participating.)

Lines 105-106: please also add (either at the beginning: "In addition to demographic characteristics, ..." or at the end ("...; (4) demographic data") the fact, that you also assessed demographic, "baseline" information.

It would be good to provide the instrument you developed and used, at best as a table (your future Table 1). As an example/model, you might refer to following recently published paper: Santi M, et al. Prescription of vitamin D among Swiss pediatricians. Eur J Pediatr. 2019;178(7):1119-1123.). In this way, it is clear to the readership which questions were asked, and also in which form (which can impact the results/answers received).

Lines 112-115: please simply write "The survey contained n=... demographic questions (Table 1)". (see comment here above in relation to such "Table 1")
Line 118: was really possible to answer n=73 questions within 10 minutes? Was this checked before the survey was launched? Was this checked during the survey? Was there a difference between the pilot-test phase and the actual survey performed among the participants?

General comment on Methods: See also general comments in the introduction. How was the instrument developed? How (and by which researchers' group: all authors, only a part, ...) were the questions generated, selected, checked, corrected, evaluated? Was internal and external reliability assessed? Was the instrument pilot-tested? Was it evaluated? Was it validated? How? Please also refer to recommendations on survey research (see also above: Boynton PM, Br Med J, 2004)

Line 129: delete "recently"
Line 130: "birth (within the last six months),..." --&gt; "birth within the last six months,..."

Lines 131-135: this means that there were some screening questions. Please state this already before (initial part of the Methods section) and also identify these questions as such (as screening questions). The insertion of the suggested "Table 1" would allow to elegantly solve this "problem".

Lines 146-147: delete ", due to differences in knowledge and attitudes expected for women who have not given birth."

Line 151: "Over 700 women..." --&gt; "Seven-hundred sixty-three (n=763) women..."
Lines 152-153: "...survey (total respondents N=763). Respondent demographic characteristics..." --&gt; "...survey. Demographic characteristics..."

Line 154: please report ranges separated by "-" instead of ",", it means: "30 (26, 34)" --&gt; "30 (26-34)", and so on.

Lines 154-156: are these high % of high school representative of the overall population or were participants a particular group ("intellectual elite")? If yes, this might well insert a selection bias... Could you insert a comparison (also rough) with the overall population?

Lines 156-158: it is curious, surprising and interesting that nulliparous mothers, although younger (which is expected), also were more likely to have completed high-school. Do you have any explanation / hypothesis of interpretation for that? "Secular trend" with younger generations having access to "more" education? Please briefly address this point in your (revised) Discussion section.

Line 160: "While" --&gt; "Although"
Line 161: "this study had similar demographic" --&gt; "this study globally had similar demographic"

Lines 169-170: please merge the respondents who had heard "preterm birth" and "premature birth" in a single category with a global percentage (mothers who already had heard either "preterm birth" or "premature birth"). Your following sentence (line 171-172) should, instead, not be modified.
Lines 191-192 (nulliparous women more likely to consume a dietary supplement than multiparous women): this is interesting. Why? Do you have any explanation / hypothesis? Please address this issue in your (revised) Discussion.

Lines 295-297 (nulliparous mothers were more likely to have changed their diet and to take dietary supplements): why? Do you have any data explaining this difference? Do you have any hypothesis of explanation? Please discuss this in your Discussion section!

Line 272: this was even more unexpected considering the high level instruction the participants received (88% high-school)! Please state this in your revised manuscript.

Line 286: "...birth indicate that..." --&gt; "...birth suggests that..."

Lines 299-300 ("despite it not being routinely recommended or prescribed in Australian antenatal care."): please also see comment on the Abstract. This is probably the key of the problem! And this is probably the first thing that should be addressed. Even more considering the good adherence to the already existing recommendations, and the fact that health professionals are the number 1 source of information.

Please explicitly state it. I am not practicing in Australia, but basing on your data I feel that is is likely that, by integrating this new recommendation on omega-3 fatty acids, the problem will already be solved, without the need to develop behavioural interventions (which is more complicated and more costly than simply updating the recommendations). Updating the recommendations would be very easy, cheap and, probably, effective. This would be a simple and logical consequence of your study and your result (stressing the usefulness and relevance of your study!).

This same comment also applies to lines 305-308: please add there that updating the recommendations and prescribing either an omega-3 rich diet or a supplement would probably work very well and effectively!

Furthermore, on lines 310-311, you might refer to that: exactly because of this, your survey "will contribute towards the design and implementation of strategies to increase the intake of omega-3 fatty acids in pregnant women!"

Finally, this same comment also applies to lines 326-327. Please revise them accordingly.

Lines 300-301 ("These findings suggest that..." until "...omega-3 fatty acid intake."): are you sure that the fact that about 1/3 took omega-3 supplements on a voluntary basis suggests that they are well tolerated? I mean, chemotherapy is not always good tolerated, but I know several patients, who would ask for it also without a specific physician recommendation... Maybe were these 30% women well-informed, or convinced of the benefit of this supplementation, and took it irrespective of the tolerance... Although this is improbable, and your interpretation might applies, I find this interpretation a "logical fallacy". If you do not have data on tolerability (did you ask questions on that?), simply delete this sentence.
Line 323 ("barriers and enablers"): which barriers and which enablers did you identify? Sorry, but in the Result section I do not find them…

Table 1:
- How is it possible that "total in household" was 2 (2,3) in nulliparous (how is it possible that the upper quartile arrives at n=3)? Patchwork families?
- State: please directly write the complete state names into the table, instead of using abbreviations and then explaining them at the bottom of the table.
- Statistical comparisons: which columns did you compare? Nulliparous vs multiparous? Please state it in the legend of the Table. To compare these 2 columns with the "Australian pregnant women" would probably not be possible/correct, unless you dispose about the whole dataset (and not only on the mean). However, for proportions it would be possible…

Table 2:
- Please merge the two categories "Advice given to me" and "The supplements were given to me" in an unique category (differential understanding from different respondents might have confounded these 2 categories, rendering them not so easy to interpret / compare one to another).
- "I took supplements in my other pregnancies": is the % calculated on the total of participants or on the multiparous mothers? The second would be the correct way to calculate this value… at best, this should be noted with a symbol (e.g. "*") and acknowledged/explained in a footnote of the Table.

Table 4
- Line 263: please provide the full legend for the "intention grading": 1 = highly unlikely, 5= highly likely, but what did 2=…, 3=… and 4=… stay for? Since the formulation might have an impact on the answers, please state the full range of corresponding expressions. Thank you!

Figure 1:
- Please merge the categories "Blogs" and "Internet" in a single category.

The literature is globally well-done. However, there are n=4 citations, which are not peer-reviewed publications. Please either substitute them with peer-reviewed literature or eliminate them:

- lines 383-384 (but I understand that maybe you need to cite the official source… this would be the only exception allowed for a non-peer-reviewed reference)
- lines 387-388
- lines 415-416.

Please insert the references suggested above at the corresponding places of the manuscript:
- Boynton PM, Greenhalgh T. Selecting, designing, and developing your questionnaire. BMJ. 2004;328(7451):1312-5.


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