Reviewer’s report

Title: Tampon Use, Environmental Chemicals and Oxidative Stress in the BioCycle Study

Version: 1 Date: 29 Jan 2019

Reviewer: Robin Dodson

Reviewer's report:

The authors present an interesting preliminary investigation of the association between tampon use and metal concentrations in blood and biomarkers of oxidative stress.

The authors have adequately addressed previous reviewer comments, although some of the detailed explanations in the response to comments could be added to the manuscript to improve the overall discussion.

Abstract:
Suggest changing "metals" to "metal concentrations" in the third sentence.

Background:
The Background is much improved and now motivates an examination of the potential importance of tampon use and chemical exposure and biomarkers of oxidative stress and inflammation.

Page 4, Line 7: "Exposure to dioxins.. " this sentence is awkward as written. The bleaching process can create dioxins to which women can then be exposed. Right now it reads that the exposure occurs through the bleaching process.

When the authors discuss other potential chemical exposures, it would help the reader if they could more clearly distinguish between what they are actually assessing in this study - metals - and those other chemicals that maybe relevant - pesticides, dioxins, fragrance chemicals.

Page 4, Line 18: Suggest adding "in the body" to the end of the sentence starting with "To our knowledge…"

Methods:
Did the authors explore the relationship between measured metal concentrations and oxidative stress and inflammation biomarkers? I realize these outcomes were not measured at the same time. If metals increase inflammation (and not oxidative stress?) than looking at the correlation between metals and concentrations may support their original hypothesis (tampon use * metal exposures * inflammation). Also, I am assuming that a similar hypothesis (tampon use * pesticide exposures * oxidative stress) also exists and discussion of this analysis would help the authors justify their investigation of tampon use * oxidative stress in the absence of pesticide exposure measurements.
Discussion:
While adequately addressed in the Reviewer comments, further explanation of the significance of the specific oxidative stress biomarkers (e.g. TBARS and PON1P) should be included in the Discussion.

The second paragraph seems out of place. I suggest switching it with the third paragraph since that paragraph is focused on the study findings (metals and oxidative stress). Then, the paragraph on other chemical exposures (dioxins, phthalates, etc) needs a topic sentence. For example, something like the last sentence of that paragraph, "Tampons may be a source of exposure to other chemicals that are related to oxidative stress and inflammation."

The limitations of the study are adequately addressed; however, I suggest starting with the strengths of the study and then discussing the limitations.

Conclusion:
I agree that chemical exposures from tampon use are something that needs additional attention. The language in the last paragraph could be tightened and made stronger. Tampon use isn't a public health concern rather tampon use is a potentially important yet understudied source of chemical exposure that could be associated with adverse health. We need to test products like tampons for chemicals and conduct additional sufficiently-powered studies of tampon users to assess the importance of tampon use as an exposure pathway.

Table 1:
I suggest presenting the demographic data in Table 1 not as characteristics among tampon users and non-tampon users but rather to compare the tampon users and non-tampon users. For example, among white women, what percent are tampon users versus non tampon users? This aligns better with the overall analysis that compares users and non-users.

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Quality of written English
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