Reviewer's report

**Title:** Vaginal douching and racial/ethnic disparities in phthalates exposures among reproductive-aged women: National Health and Nutrition Examination Survey 2001-2004

**Version:** 1  
**Date:** 25 November 2014

**Reviewer:** Tamar Berman

Reviewers's report:

Discretionary Revisions:

1. The study was based on NHANES data from 2001 – 2004. As you mention in the conclusions section (ref 46) DEP exposure is declining in the US population. I would suggest that you address use of data from 10 years ago as a limitation of the study. Why wasn’t more recent NHANES data used? Was 2001 – 2004 the only NHANES cycle in which data was collected on use of feminine hygiene products?

2. In the conclusions in the abstract you state that vaginal douching may increase exposure to "certain phthalates." But the findings of your study show an association only with DEP. I would suggest changing this sentence in the abstract to more accurately reflect your findings.

3. In the background section you mention that black adults have higher DEP metabolites than their white counterparts. Have the studies you cited explored differences in levels of other phthalates metabolites? Is DEP the only phthalate metabolites higher in blacks? This should be mentioned.

4. Also, based on previous literature, are DEP metabolites higher in black males than their white counterparts? This is relevant and should be addressed either in background or conclusions.

5. Was the survey an in person interview or questionnaire filled out by participants? This should be specified in methods. May be of interest to the reader because of personal nature of the questions.

6. In the discussion section I would recommend addressing issue of short biological half-life of phthalates. This is highly relevant since you found an association between urinary levels and a relatively infrequent behavior. How would you explain higher MEP levels in women reporting use in the past six months, in light of short biological half-life of phthalates. Previous studies on associations with personal care products have examined associations with personal care use in the past 24 hours. This should be discussed.

**Level of interest:** An article of importance in its field
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