Author’s response to reviews

Title: Development of an Environmental Health Tool Linking Chemical Exposures, Physical Location and Lung Function

Authors:

Diana Rohlman (diana.rohlman@oregonstate.edu)

Holly Dixon (dixonhol@oregonstate.edu)

Laurel Kincl (laurel.kincl@oregonstate.edu)

Andrew Larkin (andrew.larkin@oregonstate.edu)

Richard Evoy (evoyr@oregonstate.edu)

Michael Barton (michael.barton@oregonstate.edu)

Aaron Phillips (aaron.phillips@pnnl.gov)

Elena Peterson (elena.peterson@pnnl.gov)

Christopher Scaffidi (scaffidc@engr.oregonstate.edu)

Julie Herbstman (jh2678@columbia.edu)

Katrina Waters (katrina.waters@pnnl.gov)

Kim Anderson (kim.anderson@oregonstate.edu)

Version: 2 Date: 12 Jun 2019

Author’s response to reviews:

Thank you for the opportunity to respond to these minor revisions. We appreciate the continued input from reviewers. Our responses are included below each comment. We have included relevant page numbers in our responses, where we have revised our manuscript to address the comment.

Updated on 06.12.2019

• We have corrected the typographical error on line 361, appropriately referencing Figure 5.

Response to Comments
1. Reviewers Comments

Fuyuen Yip (Reviewer 2): Thank you for the comprehensive response to the reviewer comments. The revisions helped to strengthen the paper and provided a clearer understanding of the objectives of the paper. It is also well written.

One additional consideration for the paper that may be helpful to a reader is to help explain any other limitations that may exist with a small sample size, especially with respect to your assessment in ease of use, compliance, integration of data, etc., in addition to the challenges in assessing exposure-health relationships that was mentioned on p. 19.

- We appreciate the additional consideration. We have added language to the discussion (lines 461 – 467) to address the comment raised by the reviewer.

2. Authorship Change Form- Additional author - Herbstman

Currently, we are unable to accept the authorship change form received on 05/03/2019. This is because one of the authors (Kim Anderson) has not provided a signature, unfortunately we are unable to accept typed names.

We require that you send us an updated ACF with signatures from all of the authors.

- We have sent an updated ACF with a signature from Kim Anderson to Daryl Co, JEO Assistant in the Journals Editorial Office (daryl.co@biomedcentral.com), on June 6, 2019.

3. Consent to Participate

Please confirm in the section 'Ethics Approval and Consent to Participate' whether informed consent, written or verbal, was obtained from all participants and clearly state this in your manuscript. If verbal, please state the reason and whether the ethics committee approved this procedure. If the need for consent was waived by an IRB or is deemed unnecessary according to national regulations, please clearly state this, including the name of the IRB or a reference to the relevant legislation.

- We have revised the ‘Ethics Approval and Consent to Participate’ section by including the following statement: Written, informed consent was obtained from all participants prior to initiating any study activities. (Lines 548-549).

- Furthermore, we clarified the language in the Methods section (Lines 183-186) to indicate that informed consent was obtained from all participants and documented via a written, signed consent form.
4. Image Attribution

Please state in the cover letter whether the image depicted in figures 4 and 5 is your own or taken from another source. If taken from another source please acknowledge the source in the figure legend, and if it is under copyright also state the written permission given to use and adapt it. If the above conditions are not met the image needs to be removed. Please note the editors may request proof of permission at any time.

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- We have added the appropriate reference to the use of ArcGIS by ESRI in our Methods section (Lines 241-243), and updated our cover letter to reflect the permissions afforded our use of ESRI by their stated copyright. A full statement regarding ESRI copyright can be found on their website, https://www.esri.com/en-us/legal/copyright-trademarks

5. Authors Contributions

Currently, author RE (Richard Evoy) has not been mentioned in authors contributions. Please ensure all authors are included here.

- Thank you, we revised the typographic error (VE) to RE on line 584 to accurately reflect the contributions by author Richard Evoy.

6. Funding

In the section 'Funding', please also describe the role of the funding body/bodies in the design of the study and collection, analysis, and interpretation of data and in writing the manuscript.

- We have included the following statement in the ‘Funding’ section, Lines 575-576: The funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

7. Clean Manuscript

At this stage, please upload your manuscript as a single, final, clean version that does not contain any tracked changes, comments, highlights, strikethroughs or text in different colours. All relevant tables/figures/additional files should also be clean versions. Figures (and additional files) should remain uploaded as separate files. Please ensure that all figures, tables and additional-supplementary files are cited within the text.
We have uploaded our manuscript as a single, final, clean version.

Our revised cover letter is included here:

6/7/2019

BMC Public Health
BioMed Central
The Campus, 4 Crinan Street
London, N1 9XW
United Kingdom

To the editors at BMC Public Health,

We are pleased to submit our research article, “Development and Feasibility Testing of a Novel Environmental Health Tool to Link Chemical Exposures, Physical Location and Lung Function.” This article describes the results of a pilot test of the Exposure, Location and lung Function (ELF) tool, which comprises a personal passive sampling device, a location-enabled mobile phone and a portable spirometer. In combination, the ELF is capable of collecting exposure to 62 polycyclic aromatic hydrocarbons, location data and respiratory health data. This tool was developed in response to community needs and was designed to be used independently by research participants. We tested the ELF within a cohort of 10 adults with mild to moderate asthma. Using this tool, we saw that participants had a high degree of compliance to the study protocol and collected a robust data set. This data set is capable of integration with existing databases such as the Toxics Release Inventory and the Hazard Mapping System, allowing modeling to incorporate these metrics along with chemical exposure data and respiratory health data. We integrated our data with these databases using ArcGIS® by ESRI©. ESRI grants the use of esri.com Web site to freely reproduce, redistribute, rebroadcast, and/or transmit this information for personal, noncommercial purposes, including teaching, classroom use, scholarship and/or research, subject to the fair use rights enumerated in sections 107 and 108 of the Copyright Act (Title 17 of the United States Code). Additional information regarding the appropriate use and citation for ESRI software can be found on their website: https://www.esri.com/en-us/legal/copyright-trademarks.

Drs. Rohlman and Anderson disclose a financial interest in MyExposome, Inc., which is marketing products related to the research being reported. The terms of this arrangement have been reviewed and approved by Oregon State University in accordance with its policy on research conflicts of interest. The authors have no other competing interests to disclose.

All authors have reviewed and approved this manuscript for submission to BMC Public Health. This manuscript has not been published or submitted for publication elsewhere.

We appreciate your consideration of our article.
Best regards,

Diana Rohlman, PhD

Assistant Professor, Sr. Research
College of Public Health and Human Sciences | Superfund Research Program
Oregon State University
E diana.rohlman@oregonstate.edu | T 541-737-4374