

Review of: "Knowledge of Risk Associated with Exposure to Per- and Polyfluoroalkyl Substances in Abuja, Nigeria"

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Potential competing interests: No potential competing interests to declare.

The following list of comments can be very helpful to improve the clarity and/or versatility of the findings reported by this study:

[1] The aim of this study can possibly be expanded to ascertain the knowledge, attitude, and practice of the sample respondents about PFAS in order to better identify any potential sources of exposure to PFAS and then to determine the actual risks of exposure to PFAS.

[2] If this study also aims to assess the attitude and practice of each sample respondent towards PFAS, it is recommended to relate how his/her attitude is able to influence his/her management and disposal of PFAS in everyday life.

[3] PFAS are a large group of chemicals which may be toxic to humans, especially Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA). The two are widely used and easily contaminate the environment with the potential of depositing in the food chain (Betts, 2007). It is recommended to retrieve the relevant data from existing literature which indicates the extent to which PFOS and PFOA have been accumulating in the food chain, and then cite these data in the introduction section of this manuscript.

[4] Since most of these previous studies are centred on the presence of PFAS in the air and bioaccumulation in aquatic organisms and their environment, it is necessary to cite the findings of several of these past studies in the introduction section of this manuscript, and also to highlight the magnitude of the problem caused by PFAS (which is actually a ubiquitous toxin).

[5] It is recommended to provide a valid justification for the study areas to be only confined to Eagle Square, Wuse Market, Utako Market, and New Garki Market in Abuja, Nigeria. If these four study areas have been selected simply because of convenience sampling, then it is necessary to state it clearly in the manuscript.

[6] Although most of these products containing PFAS are imported from America, Europe, and Asia, the government, agencies, or NGOs in Nigeria did not take any action in educating the residents in Nigeria about the danger of PFAS because it is a general belief in Nigeria that anything imported is good and authentic. Hence, it is now recommended for this study to probe further whether the study respondents hold an intrinsic belief that PFAS is not a toxin simply because it is imported from overseas. This can be achieved by asking a list of questions that aim to elicit their attitude towards such a

belief.

[7] It is recommended to propose the use of inferential statistical techniques to examine the association between an independent variable (e.g., educational level or vocational level) and a dependent variable (e.g., knowledge) for this study. By determining the level of association between two variables, it is then possible to identify the appropriate corrective action to be taken for a selected group of the local population.

[8] The author has already alerted us to the fact that PFAS exposure in Abuja, and other parts of Nigeria and Africa, may not pose only localized risks but may progress to be a global risk or problem. Hence, it is recommended to perform a literature review to determine whether any of the other African countries have conducted any studies that evaluate the impact of PFAS on the local environment and/or local population. If they have, then it is useful to retrieve the relevant data from these studies and then cite them in the introduction section of this manuscript.

[9] The author has mentioned that PFAS are very stable and have the potential for long-range atmospheric movement (ATSDR, 2021). Hence, it is recommended to describe a brief history of the existence of PFAS by explaining when and how PFAS were originally discovered, and how their gradual dispersion into the atmosphere has occurred throughout their years of existence.

[10] United Nations Environment Programme (UNEP) and Stockholm Convention on Persistent Organic Pollutants (POPs) offices should monitor effectively the movement of PFAS chemicals and products across Africa and apply sanctions as required because of the toxic nature of these PFAS chemicals, especially PFOS and PFOA. It is very important to note that there are insufficient resources and capacity to study, monitor, or track the incidence of PFAS in Abuja and any other city in Africa (Ssebugere et al., 2020). Therefore, it is recommended for the author to emphasize that the overall rationale of this study arises from the fact that Africa currently does not have the capacity to monitor or track the presence of PFAS within the local geographical area. By mentioning it in the introduction section of this manuscript, the author is able to provide a valid justification for this questionnaire-based study.