

REVIEWER'S REPORT

Manuscript No.: IJAR-53027

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Title: Health risks assessment of heavy metals (Al, Cd, Cr, Cu, Fe, Ni, Pb) linked to the consumption of used fish frying oils used by "garba" traders : case of the city of Daloa

Recommendation:

Accept as it is
Accept after minor revision.....
 Accept after major revision
 Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality		✓		
Techn. Quality		✓		
Clarity			✓	
Significance		✓		

Reviewer Name: Dr Aamina

Reviewer's Comment for Publication.

Summary of Content:

The study evaluates the potential health risks associated with the consumption of used palm oil by "garba" traders in Daloa, Côte d'Ivoire. Fifteen samples of used fish frying oils were collected between May and July 2024 and analyzed for heavy metal content (Al, Cd, Cr, Cu, Fe, Ni, Pb) using Atomic Absorption Spectroscopy (AAS). The concentrations of all detected metals were compared to international standards (CODINORM, FAO, WHO). Hazard Index (HI) and Incremental Lifetime Cancer Risk (ILCR) values were calculated to determine carcinogenic and non-carcinogenic risks for both children and adults. All measured values fell below the threshold levels, indicating no significant health risks for consumers.

Strengths:

- The research addresses a relevant public health concern associated with the reuse of palm oil in a culturally significant dish, "garba".
- The methodology is clearly described, specifying sample size, collection period, and analytical technique (AAS).

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- The study integrates both carcinogenic and non-carcinogenic risk assessments, which strengthens its public health relevance.
- Results are contextualized using established international standards, enhancing their credibility and reliability.
- The abstract and introduction provide clear background information on the cultural and economic significance of palm oil and "garba" traders in Côte d'Ivoire.

Scientific Quality:

The study applies recognized methods for heavy metal analysis and risk assessment. The clear mention of thresholds from international standards (CODINORM, FAO, WHO) ensures that findings are presented in a comparative framework. The dual focus on ingestion and dermal exposure risks across different age groups demonstrates comprehensive risk evaluation.

Relevance and Impact:

This study is highly relevant for food safety authorities, consumers, and public health officials in Côte d'Ivoire. By confirming that the heavy metal levels and risk values are below dangerous thresholds, the findings provide reassurance while also contributing baseline data for future monitoring efforts.

Overall Evaluation:

The research is scientifically sound, well-documented, and contributes important data on heavy metal exposure through commonly consumed food products. The focus on a culturally significant practice in Côte d'Ivoire enhances its practical importance.