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Health Risk Assessment According to Exposure with Heavy Metals and Physicochemical Parameters; Water Quality Index and Contamination Degree Evaluation in Bottled Water

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Abstract : The survey analyzed 71 bottled water brands in Tehran, Iran, examining 10 physicochemical parameters and 16 heavy metals. The water quality index (WQI) approach was used to assess water quality, and methods such as carcinogen risk (CR) and hazard index (HI) were employed to evaluate health risks. The results indicated that the bottled water had good quality overall, but some brands were of poor or very poor quality. The study also revealed significant human health risks, especially for children, due to the presence of minerals and heavy metals in bottled water. Correlation analyses and risk assessments for various substances were conducted, providing valuable insights into the potential health impacts of the analyzed bottled water.

Keywords : bottled wate, rwater quality index, health risk assessment, contamination degree, heavy metal evaluation index
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