

5th Global Summit on **ENVIRONMENTAL HEALTH**

October 14, 2024 | Madrid, Spain

**Evaluation of the entropy index of groundwater quality and its impact on human health: Case study of birjand plain, Iran****Vahid Jamali***Yazd University, Iran*

Providing clean water has always been a challenge for human societies, particularly in arid and semi-arid areas where groundwater resources are the main resource of water demands. Water is a vital substance that people deal with every day, so its quality can directly affect human health. To evaluate water quality, various indicators have been created and developed over time. The purpose of this article is to assess the quality of groundwater in drinking wells in Birjand Plain and to determine the probability of occurrence of non-cancerous diseases in two age groups of children and adults in the study area. To achieve this goal, the entropy water quality index (EWQI) was first calculated using Shannon's entropy equations, and then the hazard index (HI) was obtained to determine the quality of groundwater according to the concentration of Pb, Cd, Cr, Cu, Zn and Fe elements to comprehend water as a cause of non-cancerous disease in two groups of children and adults. Finally, Pearson's coefficient was evaluated to find the correlation of parameters. This research was carried out on 26 drinking wells and the results showed that even though the values of EWQI and HI are in bad condition in some regions of the aquifer, the drinking wells are mostly located in places where the desirable water quality conditions. Based on the EWQI, the quality of 3.85% of the cases were classified as very good, 46.15% were classified as good quality, 30.77% as average quality, and 19.23% as bad quality. Additionally, according to the HI results, all the drinking wells in the study area had favorable water quality for adults. However, one of the drinking wells could cause non-cancerous diseases in children. According to the results, it can be realized that although the water quality in the drinking wells was at an acceptable level, it is necessary to make decisions to prevent the occurrence of diseases in children in the vicinity of the well with poor water quality, and also from the construction new wells should be avoided in areas with high risk.

**Biography**

Vahid Jamali graduated in civil engineering and water resources management. He is an environmental researcher and his expertise lies in water and environmental studies, focusing on research and study of water resources quality and published some papers in reputable journals. followed up on epilepsy cases treated with Perampanel, completing a significant real-world study.