Bacterial contamination in drinking water of urban Peshawar: a comparative study at the sources and user points of tube wells

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abstract

Life needs clean drinking water free from contaminants including pathogenic bacteria. This study was conducted to assess the drinking water quality in urban areas of Peshawar District, Khyber Pakhtunkhwa, Pakistan. Water samples were collected at the source (tube wells) and the user points. These collected samples were analyzed for physicochemical parameters such as pH, turbidity, electrical conductivity (EC) and total dissolved solids (TDS), and bacterial contaminations. Results showed that physicochemical parameters were within the safe limits of drinking water guidelines set by the World Health Organization. However, drinking water was found severely contaminated with gastrointestinal flora (local coliforms and Escherichia coli) and infectious bacterial agents (Salmonella spp., Shigella spp., Vibrio cholera, Staphylococcus aureus, and Pseudomonas aeruginosa). High levels of bacterial contamination may pose potential threats to the local community and could result in waterborne diseases. Therefore, this study strongly recommends chlorination or boiling of the drinking water before use to avoid health risk in the inhabitants of the study area.

Keywords: Bacterial; Contamination; Drinking water; Groundwater

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