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ASSESSMENT OF WATER HANDLING PRACTICES IN HOUSEHOLDS AND RELATED HEALTH IMPACTS: A CASE STUDY IN AL- EIZARIYA AND ABU DIS

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Abstract

Background: Access to safe drinking water is fundamental to public health and sustainable development. This study evaluated household water handling practices and their associated health impacts in Abu Dis and Al-Eizariya, Jerusalem Governorate. A descriptive cross-sectional approach was adopted, involving the collection of twenty water samples from household storage tanks and public supply points. Microbiological analysis using M-Endo and M-FC agar indicated that all samples were free from total and fecal coliforms (0 CFU/100 mL), thus conforming to World Health Organization standards. Survey data revealed variations in household practices: 89.5% covered their storage containers, 73.7% used separate vessels for drinking water, and only 25% utilized additional treatment methods. While 80% of participants reported no waterborne illnesses, concerns about contamination remained linked to storage practices. These results suggest that water sources in the study area were microbiologically safe at the time of sampling, but underscore the need for ongoing monitoring and community awareness to ensure sustained water quality and prevent future health risks.

Methods: A descriptive cross-sectional study was implemented to assess household water handling practices and their health implications in Abu Dis and Al-Eizariya. Twenty households were conveniently selected for survey participation. Data collection encompassed water collection methods, types of storage containers, household water treatment practices, sanitation and hygiene behaviors, perceptions of water safety, and reported health effects attributed to unsafe water. Additionally, twenty drinking water samples were obtained from household storage tanks and public supply points and analyzed microbiologically using M-Endo agar for total coliforms and M-FC agar for fecal coliforms. All laboratory protocols adhered to standard safety procedures. Descriptive statistics, including frequency and percentage distributions.

Results: Microbiological tests revealed that all samples were negative for microorganisms capable of causing illness. To contextualize these findings, a survey was conducted among the 20 households from which the water samples were collected. Bottled water was identified as the primary drinking water source for 55% of households, with 75% reporting regular availability. Plastic tanks were the predominant storage method (60%), and most containers were covered (89.5%). Only 25% of respondents reported using

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additional water treatment or filtration. Notably, approximately 80% of participants indicated they had not experienced any waterborne illness symptoms, such as diarrhea, reinforcing the conclusion that the water was clean and safe for consumption at the time of the study.

Conclusions: The study demonstrates that while households in Abu Dis and Al-Eizariya recognize the importance of safe water and proper sanitation, significant challenges remain in consistent water treatment, storage practices, and wastewater disposal. Although most households cover their storage containers and perceive their water as safe, gaps in treatment practices and limited awareness of health risks highlight vulnerabilities. Strengthening community education on the dangers of untreated water, promoting affordable treatment methods, and improving sanitation infrastructure are essential steps toward safeguarding public health. Equitable access to clean drinking water, combined with policy interventions and active community engagement, is critical to ensuring sustainable water safety and reducing the burden of waterborne diseases

Key words: Safe drinking water, household water handling practices, Microbiological analysis, M-Endo, M-FC.

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