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Assessment of drinking water quality at public schools at Jenin Directorate of Education, Palestine

Reem Khalil[a], Nidal Mahmoud[b,*]

[a]*Faculty of Graduate Studies, Birzeit University, P.O. Box 14, The West Bank, Birzeit P627, Palestine, email: reemo_154@yahoo.com*
[b]*Institute of Environmental and Water Studies, Birzeit University, P.O. Box 14, The West Bank, Birzeit P627, Palestine, Tel.: +970 2 2982120; email: nmahmoud@birzeit.edu*

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ABSTRACT

The aim of this study was to assess drinking water quality at the public schools in Jenin Directorate of Education. A questionnaire was distributed to schools according to drinking water sources, location of school (rural and urban), and grade levels of schools. 59 samples of drinking water were collected from the schools faucets and analyzed. The results showed that the schools' drinking water sources include: municipal water only, purchased tanker truck water, agricultural wells, direct from Mekorot Company, and rainwater harvesting. All of the physical and chemical parameters met the PSI and WHO Guidelines except the total hardness as 20% of the schools exceeded the Palestinian standard values of 400 mg/L as $CaCO_3$. Also free residual chlorine concentrations in the water of 70% of the schools were less than the recommended WHO values in the range of 0.6–1.0 mg/L. Schools purchasing tanker truck water or use agricultural wells, rainwater harvesting had total coliform and fecal coliform in their water. Higher percentage of the schools in rural area had total and fecal coliforms (30% and 23.3%, respectively) than the schools in urban area (20.7% and 13.8%, respectively). A significant relationship between the interruption in municipal water supply and water contamination was found.

Keywords: School; Drinking water; Water quality; Water supply

* Corresponding author.

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