

MONITORING THE QUALITY OF DRINKING WATER IN RURAL HEALTH CLINICS AND RURAL PRIMARY SCHOOLS WITH THEIR OWN WELLS IN THE MAČVA DISTRICT, SERBIA

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Background: According to the WHO, around 1.1 billion people lack access to good quality water. The microbiological quality of drinking water is a major public health concern due to the risk of waterborne diseases. Therefore, constant monitoring of drinking water quality in water supply systems is essential.

Methods and Objectives: Our study aims to investigate the physicochemical and microbiological quality of drinking water in rural health clinics and rural primary schools with their own groundwater supply in the Mačva District, Serbia, from 2019 to 2023. The laboratory analysis of water was conducted by the Institute of Public Health of Sabac.

Results: In the observed six-year period, 2,496 drinking water samples from rural health clinics and rural primary schools with their own water supply in the Mačva District were analyzed. Non-compliance with physicochemical and microbiological criteria set by Serbian regulations was found in 875 (35.1%) and 609 (24.4%) samples, respectively. A slight decrease of 2.6% per year in the percentage of microbiological non-compliance of drinking water samples from health clinics and schools was observed ($R^2 = 0.3576$). In contrast, the percentage of non-compliance with physicochemical criteria increased by 4.6% per year ($R^2 = 0.6041$).

Conclusions: This study highlights the importance of continuous monitoring and improvement of drinking water quality in rural health clinics and rural primary schools with their own groundwater supply in the Mačva District. While microbiological quality showed a slight improvement, the physicochemical quality deteriorated over the observed period. We recommend implementing corrective measures, including regular well maintenance, upgrading water treatment systems, and training staff. Additionally, boosting community education on water safety can help reduce contamination risks.

Keywords: drinking water quality, primary school, rural health clinics, groundwater supply well, Mačva District