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WATER SURVEILLANCE AND PUBLIC HEALTH STRATEGIES IN SÃO JOÃO DO MIRITI, MANACAPURU

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Abstract: Water quality is an essential factor for public health, especially in communities that rely on artesian wells as a source of supply. Since 1977, Brazilian legislation has emphasized the importance of monitoring water quality, an essential measure to ensure public health and access to water resources as a fundamental human right. This study aimed to implement an effective water surveillance system for the community of São João do Miriti, in Manacapuru, Amazonas, in order to prevent water-related diseases. This is an extension project of a qualitative and quantitative nature, which combined bibliographical and field research. The methodology included collecting water samples for chemical, physical and biological analysis, distributing educational material and improving the local water infrastructure. The results indicated the presence of fecal coliforms in one of the wells analyzed, leading to the adoption of corrective measures such as chlorinating the well, cleaning the area and raising community awareness. It can be concluded that ongoing surveillance, combined with health education and improvements to infrastructure, is essential to guaranteeing access to drinking water in vulnerable communities. Integration between academic institutions, public authorities and civil society is crucial to achieving sustainable and effective solutions.

Keywords: water surveillance, public health, water contamination, artesian wells, sustainability

INTRODUCTION

The availability of drinking water is a fundamental human right and an indispensable condition for promoting public health. However, in peripheral communities, where the water supply depends on artesian wells, the quality of the water often poses health risks due to the lack of adequate basic sanitation. According to the World Health Organization (WHO), more than 2 billion people in the world consume water from contaminated sources, which contributes significantly to the incidence of waterborne diseases (WHO, 2021).

In Brazil, the Ministry of Health's Consolidation Ordinance No. 5/2017 establishes potability standards and makes it mandatory to continuously monitor the quality of water for human consumption (BRASIL, 2017). However, in many communities, such as São João do Miriti, precarious infrastructure and the lack of adequate basic sanitation represent a significant challenge to the implementation of these measures. Recent studies indicate that peripheral regions of the Amazon face high rates of waterborne diseases due to the contamination of water sources by pathogens (SILVA et al., 2023).

This study stands out for its significance in integrating water surveillance and public health actions with the active participation of medical students and community agents. In addition to promoting improvements in water quality, the initiative seeks to raise awareness in the community about the importance of correct management of water resources and sanitation, thus contributing to the achievement of the Sustainable Development Goals (SDGs), in particular SDG 6, which aims to ensure the availability and sustainable management of water and sanitation for all (UN, 2022).

Given the relevance of the issue and the socio-economic context of the region, the aim of this work was to implement an effective water surveillance system capable of identifying and mitigating the risks associated with the consumption of contaminated water. Through an extension project of a qualitative and quantitative nature, activities were carried out to collect and analyze water samples, distribute educational materials and physically intervene in the artesian wells of the São João do Miriti community.

METHODOLOGY

The study used a combination of bibliographic and field research, including the collection of water samples from wells for chemical, physical and biological analysis. The activities were carried out in three main stages:

1. Collection and microbiological analysis of the water Water samples were collected from the community's artesian wells, with the support of the team from the National Program for the Surveillance of Water Quality for Human Consumption (VIGIAGUA). The analyses included parameters such as turbidity, pH and residual chlorine, as well as the detection of total and thermotolerant coliforms.

2. Interaction with the community and distribution of educational material The intervention included the distribution of information leaflets and interactive activities with the population, with the aim of raising awareness about the importance of water conservation and local infrastructure.

3. Chlorification and disinfection of the well Once the contamination by total coliforms was proven, the team from the Autonomous Water and Sewage Service (SAAE) together with VIGIAGUA chlorinated the well using hypochlorite stones.

4. Land clearing and infrastructure The land around the well was cleared with the help of brushcutters, and a concrete base was built to prevent the accumulation of weeds and prevent future surface contamination.

RESULTS AND DISCUSSION

The results indicated that the infrastructure and water quality of the wells in São João do Miriti were precarious, with the presence of fecal coliforms in one of the wells analyzed standing out. Based on these findings, intervention strategies were outlined which included health education, the installation of purification systems with the addition of chlorine and joint cleaning efforts in the vicinity of the wells. As a result, 25 local families were guaranteed a supply of drinking water.

The experience gained from this extension project was extremely valuable for the medical students involved, providing a practical understanding of the interaction between water quality and the incidence of diseases such as diarrhea. The project not only addressed vital problems related to public health and environmental sustainability, but also contributed to the implementation of the United Nations Sustainable Development Goals, emphasizing the importance of guaranteeing access to safe and clean water.

CONCLUSION

The project highlighted the importance of water monitoring initiatives in vulnerable communities, demonstrating that integration between academic institutions and public authorities can provide effective solutions to public health problems. It is recommended that monitoring continues and that the project is expanded to other regions with similar situations.

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