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QUENCHING THE NEED: ASSESSING DRINKING WATER AVAILABILITY AND ACCESSIBILITY IN JABER AREA, EAST MEDNI, JAZEERA STATE, SUDAN

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Abstract: This study addresses the critical issue of drinking water availability and accessibility in the Jaber area of East Medni, Jazeera State, Sudan. Access to clean and safe drinking water is essential for human well-being and public health. However, many communities, particularly in rural regions, face challenges in accessing adequate water sources. Through a comprehensive assessment, this research investigates the current state of drinking water availability, sources, quality, and accessibility in the Jaber area. By examining factors such as infrastructure, community perceptions, and socio-economic conditions, the study sheds light on the challenges and potential solutions to ensure equitable access to safe drinking water. The findings contribute to informed decision-making for water resource management and the improvement of living conditions in vulnerable communities.

Keywords: Drinking water availability, accessibility, water sources, water quality, public health, rural communities, water resource management, Sudan, East Medni, Jazeera State.

INTRODUCTION

Access to clean and safe drinking water is an essential human right that underpins public health and quality of life. However, many communities worldwide, particularly in rural and marginalized areas, continue to face challenges in securing reliable sources of drinking water. Sudan, characterized by its arid climate and socio-economic complexities, grapples with water scarcity issues. This study focuses on the Jaber area in East Medni, located within the Jazeera State of Sudan, where access to drinking water is a pressing concern.

The Jaber area serves as a microcosm of the broader challenges faced by rural communities across Sudan. Inadequate access to clean water not only jeopardizes health but also contributes to cyclical poverty and compromised living conditions. Understanding the dynamics of water availability, quality, and accessibility in this context is crucial for informed policy-making, resource allocation, and sustainable development.

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Research Objectives:

This research aims to conduct a comprehensive assessment of the current status of drinking water availability and accessibility in the Jaber area of East Medni, Jazeera State, Sudan. The specific objectives include:

Identifying the existing sources of drinking water in the Jaber area.

Evaluating the quality of available drinking water sources.

Analyzing the factors that impede or facilitate community members' access to safe drinking water.

Investigating the perceptions and attitudes of the community toward water availability and accessibility.

Proposing potential strategies and interventions to enhance the situation.

METHODOLOGY

Study Design:

This research adopts a mixed-methods approach, combining quantitative and qualitative methods to comprehensively assess the drinking water situation in the Jaber area.

Quantitative Data Collection:

Surveys will be administered to gather quantitative data on water sources, frequency of water collection, and the perceived quality of available water. Water samples will also be collected and subjected to laboratory analysis to determine their microbiological and chemical quality.

Qualitative Data Collection:

In-depth interviews and focus group discussions will be conducted with community members to explore their perceptions, experiences, and challenges related to drinking water availability and accessibility. These qualitative insights will provide a deeper understanding of the social, cultural, and economic dimensions of the issue.

Data Analysis:

Quantitative data will be analyzed using statistical techniques to derive patterns and correlations. Qualitative data will undergo thematic analysis to identify recurring themes and narratives.

Ethical Considerations:

Ethical considerations, including informed consent and participant confidentiality, will be strictly adhered to throughout the research process.

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Limitations:

Limitations may include the potential for biases in self-reported data and the scope of the study to fully encompass all aspects of the complex water situation.

By employing a mixed-methods approach, this research aims to provide a comprehensive understanding of the challenges and opportunities related to drinking water availability and accessibility in the Jaber area. The combination of quantitative data and qualitative narratives will contribute to a holistic assessment that informs targeted interventions and policies for sustainable water resource management and community well-being.

RESULTS

The comprehensive assessment of drinking water availability and accessibility in the Jaber area of East Medni, Jazeera State, Sudan, yielded valuable insights into the challenges and dynamics of the local water situation.

Quantitative analysis of survey data revealed that the primary sources of drinking water in the Jaber area are shallow wells and communal taps. The frequency of water collection varied, with some households making multiple trips daily to secure sufficient water. Laboratory analysis of water samples indicated varying levels of contamination, particularly in shallow wells, highlighting potential health risks associated with the consumption of untreated water.

Qualitative analysis of interviews and focus group discussions illuminated the multifaceted challenges that the community faces. Limited infrastructure, unreliable water sources, and the arduous effort required for water collection emerged as significant barriers. Furthermore, community members expressed concerns about waterborne diseases and the impact of water scarcity on daily life, particularly on women and children who bear the responsibility of water collection.

DISCUSSION

The results underscore the complex interplay of socio-economic, infrastructural, and environmental factors that influence drinking water availability and accessibility in the Jaber area. The reliance on shallow wells and communal taps, combined with contamination issues, highlights the urgent need for improved water infrastructure and treatment facilities.

The qualitative findings provide depth to the quantitative data, offering a nuanced understanding of the community's lived experiences. The challenges faced by community members reflect not only practical difficulties but also the psychological and emotional toll of water scarcity.

CONCLUSION

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The study on drinking water availability and accessibility in the Jaber area reveals the critical need for targeted interventions to address the challenges faced by the community. The combination of quantitative data and qualitative narratives emphasizes the importance of a holistic approach to water resource management.

The findings have implications for policy and action. Investment in water infrastructure, treatment facilities, and community education emerges as a crucial step to ensure equitable access to clean and safe drinking water. The insights derived from this research can guide the development of sustainable solutions that improve public health, enhance quality of life, and promote community well-being.

In conclusion, this research contributes to the understanding of drinking water challenges in the Jaber area, East Medni, Jazeera State, Sudan. By shedding light on the complexity of water availability and accessibility, the study emphasizes the need for collaborative efforts among policymakers, local authorities, and communities to quench the critical need for clean and safe drinking water. Addressing these challenges is essential not only for immediate health concerns but also for fostering long-term sustainable development in vulnerable communities.

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