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Post-War Internal Displacement and the Emergence of Dengue Fever in Gezira State, Sudan: Observations from Primary Health Care Practice

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Abstract:

Background: Armed conflicts in Sudan have led to large-scale internal displacement, creating conditions that favor the emergence and spread of dengue fever. This study explores the relationship between displacement and dengue outbreaks, based on real-world observations from primary health care practice.

Methods: Observational data were collected from displaced populations residing in temporary shelters in Gezira State, Sudan. Clinical symptoms, incidence of dengue fever, living conditions, and vector control practices were recorded. Only non-identifiable, ethical patient data were used.

Results: Overcrowded settlements with poor sanitation and stagnant water were associated with higher incidence of dengue fever. Limited community awareness and inappropriate use of NSAIDs contributed to complications. Family medicine interventions, including early detection and community education, mitigated severe outcomes.

Conclusions: Post-war displacement significantly increases vulnerability to dengue fever. Strengthening primary health care and family medicine initiatives in displaced populations is essential to prevent outbreaks and reduce morbidity.

Keywords: Dengue Fever, Internal Displacement, Family Medicine, Gezira State, Sudan, Post-Conflict Health

Introduction:

Armed conflicts in Sudan have displaced thousands of families, forcing them into overcrowded temporary shelters with poor sanitation. Historically, dengue fever was uncommon in Gezira State and primarily confined to eastern Sudan. However, after the recent armed conflict, a marked increase in dengue cases has been observed in displaced populations.

Vector-borne diseases such as dengue are highly sensitive to environmental and social changes. Overcrowding, stagnant water, and limited community awareness increase mosquito breeding and disease transmission. Family medicine practitioners play a vital role in surveillance, early detection, and community health education in these fragile settings.

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Methods:

Study Design: Observational, descriptive study

Setting: Displacement camps and temporary settlements in Gezira State, Sudan

Participants: Displaced individuals presenting with febrile illness and dengue-related symptoms

Data Collection: Daily clinical monitoring, symptom recording, assessment of environmental conditions (water storage, sanitation, waste management), and documentation of community knowledge on dengue prevention

Ethical Considerations: No identifiable patient data were used; all observations adhered to ethical guidelines for primary care practice

Results:

Incidence: Displaced individuals in temporary shelters showed a significant increase in dengue fever cases compared to pre-war baseline data.

Environmental Factors: Overcrowding, poor sanitation, and stagnant water were strongly associated with dengue outbreaks.

Behavioral Factors: Limited community knowledge and inappropriate use of NSAIDs contributed to disease complications.

Family Medicine Interventions: Community education sessions, early symptom recognition, and vector control awareness helped reduce severe cases and hospitalizations.

Discussion:

This study highlights the epidemiological shift of dengue fever in a post-conflict setting. Internal displacement creates environments conducive to mosquito breeding, increasing the risk of outbreaks. Early detection and health education by family medicine practitioners are crucial in mitigating the impact of dengue fever.

Previous research has shown similar patterns in other low-resource, conflict-affected regions, emphasizing the importance of strengthening primary health care systems to prevent vector-borne diseases. These findings underscore the need for integrated surveillance, rapid response, and community-focused interventions in displaced populations.

Conclusion:

Post-war internal displacement is associated with a higher incidence of dengue fever in Gezira State, Sudan. Strengthening family medicine and primary health care initiatives in displaced populations is essential for early detection, community education, and outbreak prevention. These interventions can reduce morbidity and improve health outcomes in fragile, post-conflict settings.

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