**Title:** **Brucellosis and the One Health Approach: A Re-emerging Overlooked Zoonotic Threat**

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**ABSTRACT**

**Background**: Brucellosis is a significantly neglected zoonotic disease endemic in many countries. It affects a wide range of various food animal species, leading to economic losses due to the customary sacrifice of infected animals. The leading causes of human infection are consumption of unpasteurized milk or meat or contact with infected animals.

**Objective:** To assess the seroprevalence and identify risk factors associated with brucellosis in food animals in Qatar. Additionally, the study aims to explore demographic characteristics, prevalent symptoms, causative species, antibiotic susceptibility, and risk factors related to human brucellosis.

**Methods:** 248 camel, 246 sheep, 246 goat blood samples, and 196 human blood culture samples have been collected. Rose Bengal test and competitive-enzyme-linked immunosorbent assay were performed to determine animal brucellosis seroprevalence. The polymerase chain reaction was used to identify Brucella spp. E-test was used to investigate antibiotic susceptibility against 8 antibiotics. Regression models were used to perform univariable and multivariable risk factors analysis for both animal and human brucellosis.

**Results:** Seroprevalence was 20.6%, 16.7%, and 2.4% in camels, sheep, and goats, respectively. Univariable analysis showed that old age and the female in camels and young age in sheep were associated with a higher prevalence of brucellosis. Consumption of raw milk was the leading cause of human brucellosis (58.6%). Most human patients were adults (74%), mainly males (80.6%). South Asian patients constituted a significant percentage (42.9%), followed by Qatari patients (28.6%). The most common symptom was fever (91.9%). The causative agent in all patients was *B. melitensis*, and none of the samples showed antibiotic resistance

**Conclusion:** The alarming prevalence of brucellosis in animals, particularly camels and sheep, underscores the urgency for disease control in food animals to mitigate its transmission to humans. Implementing measures that raise awareness about the risks associated with consuming raw milk is imperative.

**BIOGRAPHY**

Dr. Nahla Omer Eltai; is a researcher of infectious diseases at Qatar University, Biomedical Research Center (BRC), She received her Ph. D. from Humboldt University, Berlin, Germany. Dr. Eltai is currently leading the microbiology research at BRC. Her research and teaching experiences have been fostered by several years of intensive work at state-of-the-art and multidisciplinary institutions; Dr. Eltai has published over 45 papers in peer-reviewed journals and was awarded a patent on her discovery.

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