

# **An Analytical Study of the Impact of Elevated Temperatures and Altered Precipitation Patterns on the Prevalence of Parasitic Diseases**

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## **Abstract:**

This study, conducted in Babil Governorate, Iraq, investigated the relationship between climatic changes (temperature, rainfall, drought) and the prevalence of intestinal parasites (*Entamoeba coli*, *Giardia*, *Hymenolepis nana*) from 2022 to 2024, using data from three local hospitals. Results revealed a significant surge in infections in 2024 (92 cases) alongside rising temperatures (35.7°C) and reduced rainfall (90 mm), highlighting intensified water contamination during droughts. *E. coli* infections were prevalent among adults (mean age: 39.2 years), while *Giardia* dominated younger populations (28.7 years), with gender disparities (62% females for *E. coli* vs. 67% males for *H. Nana*). Regression analysis confirmed a strong age-parasite association ( $\beta=0.45$ ,  $P<0.001$ ). These findings align with prior studies, such as the WHO (2020) linking drought to parasite concentration in water, and Khalil et al. (2021) on behavioral risk factors. The study advocates enhanced water quality monitoring and public health education, particularly in drought-prone regions.

**Keywords:** Intestinal parasites, Climate change, Water contamination, Babil Governorate, Epidemiological spread.