

## **EPIDEMIOLOGY OF INTESTINAL PARASITIC INFECTIONS AMONG INMATES OF SELECTED PRISONS IN SOUTHERN GHANA**

### **ABSTRACT**

Prison inmates, particularly those in Africa, are known to be at risk of intestinal parasitic infections (IPIs) due to overcrowding, limited access to water and poor sanitation. However, there is an evidence gap with respect to the burden and factors associated with IPIs among Ghanaian inmates. This study determined the epidemiology of intestinal parasitic infections among prison inmates in Southern Ghana. A structured closed-ended questionnaire was employed to obtain information on personal characteristics of 461 inmates from three prison facilities (i.e., Nsawam Medium Security, Sekondi Central and Ho Central Prisons). Stool samples were collected and analysed for the presence of various stages of intestinal parasites. A modified version of the Water and Sanitation for Health Facility Improvement Tool (WASH-FIT) version 2.0 was used to evaluate the water, sanitation and hygiene (WASH) facilities in the three prisons. Nutritional assessment was done using the Nutritional Risk Index (NRI) Score and Body Mass Index (BMI). Venous blood collected from inmates were analysed for haemato-immunological parameters, including full blood count parameters, immunoglobulin E (IgE) and interleukin-10 (IL-10). Also, six (6) systemic inflammatory parameters were calculated. Overall, the prevalence of IPIs among inmates was 38.2%. Factors such as untrimmed fingernails ( $p=0.001$ ), itchy skin ( $p<0.001$ ), nausea ( $p<0.001$ ) and worm expulsion ( $p=0.013$ ) were associated with IPIs. Blood parameters such as leukocytosis ( $p=0.002$ ), eosinophilia ( $p=0.030$ ), Aggregated Index of Systemic Inflammation ( $p=0.042$ ), IgE ( $p=0.008$ ), IL-10 ( $p<0.001$ ) and undernutrition ( $p<0.001$ ) were associated with IPIs among inmates. The high prevalence of IPIs among prison inmates, and poor nutrition and WASH conditions call for regular screening and deworming activities among inmates, improvement in food quality and WASH in Ghanaian prisons.

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