

**ISOLATION, IDENTIFICATION AND DETERMINATION OF ANTIBIOTIC
SUSCEPTIBILITY PROFILES OF DIARRHEAGENIC BACTERIA AMONG
FOOD HANDLERS IN KERICHO TOWN, KERICHO COUNTY, KENYA**

CHERUIYOT ROBERT SANG

**A RESEARCH THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE DEGREE IN
MEDICAL LABORATORY SCIENCES OF
MOUNT KENYA UNIVERSITY**

OCTOBER, 2016

ABSTRACT

Diarrhea as a result of food contamination from food handlers continues to pose a serious public health concern and more interventions has to be done to prevent this problem. The importance of food handlers as reservoirs of diarrheagenic bacteria is a constant source of infection to clientele visiting food establishments within every town setting. Correct isolation of diarrheagenic bacteria from food handlers is necessary for accurate prediction on their frequency and any possible change in response to antibiotics. A total of 384 stool specimens were collected from persons involved in food handling and related. Stool specimens collected in sterile wide mouthed containers were taken to the Kericho District Hospital Microbiology Laboratory for processing. The samples were inoculated onto the MacConkey agar, Hektoen Enteric Agar, Sheep Blood agar, MacConkey with Sorbitol, Salmonella Shigella Agar and Thiosulphate Citrate Bile sucrose Agar plates and were incubated aerobically for 18-24 hours at 37°C. Bacterial pathogens were identified by conventional microbiological methods while antibiotic susceptibility of bacterial isolates was determined using the disk diffusion method. Most frequent isolates were various strains of *Escherichia coli* (Enteroinvasive *E. coli* 5.7%, Enteroaggregative *E. coli* 2.1%, Enteropathogenic *E. coli* 2.1%, and Enterotoxigenic *E. coli* 1.6%). *Salmonella* was isolated in 3.1% of the samples and *Shigella* isolates were recorded in 1.0% of the samples. *Salmonella* isolates showed resistance to Ampicillin at 40 % and to Septrin at 60 % and sensitive to other antibiotics tested. *Shigella* isolates showed resistance to both Ampicillin (75%) and Septrin at 25%. *E. coli* isolates showed resistance to eleven of the antibiotics tested. The study findings emphasize the importance of food handlers as potential sources of infections and suggest appropriate hygienic and sanitary control measures. Accurate epidemiologic information on diarrheagenic bacteria associated with food handlers in Kericho town will be critical in strengthening existing diarrhea management policies in terms of treatment and to strengthen future awareness and health promotion practices.

Key words: Diarrheagenic bacteria, food handlers, culture media, antimicrobial resistance, Kericho town